

# AMERICAN RAILROAD JOURNAL.

## STEAM NAVIGATION, COMMERCE, MINING, MANUFACTURES.

HENRY V. POOR, Editor.

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### ASSISTANT EDITORS,

J. T. HODGE, *For Mining and Metallurgy.*  
GEN. CHAS. T. JAMES, *For Manufactures and the  
Mechanic Arts.*

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character;—while the ore itself when these indications testify to its origin from the quartz, is highly siliceous; and when derived from the slates, whose decomposition has been more complete, it is found free from stony matter.

Together with this ore, Mr. Granger mixes some magnetic ore from New York, but without perceptible advantage. "An economical arrangement of Mr. Granger is worthy of notice. The slag is placed in a stamping machine, into which a stream of water is directed, to wash out the vitreous portions, and the rest is re-melted." A more economical arrangement would be so to proportion the flux and amount of air blown in and its temperature, that the cinder should run too clean to pay for this process.

The two *Brandon* furnaces, according to the statement of Mr. C. W. Conant, published in Professor Adams' Report, and dated Oct. 7, 1845, make about 1,200 tons pig iron and 100 tons of castings per annum, the ore averaging 50 per cent. of iron.—This I imagine is a high estimate of the percentage of the ore, as I understand from other sources it is of an earthy character, and is subjected to washing, being what is called "wash-ore."

The furnace in Brandon village is owned by Mr. J. E. Conant; the "Forestville furnace," three miles north east from Brandon, by Mr. Blake and others.

The iron ores are accompanied by extensive beds of manganese, which are partially wrought; but the expenses of transportation, the distance to the lake being about twenty miles, are a serious objection to the full development of the mineral resources of this vicinity. Professor Adams says of the ore bed, that it is associated with the same limestone that accompanies the hematite in other deposits. "The surface of the rock is very uneven, in some places at or near the surface of the ground, in others at an unknown depth below the ore-bed, the bottom of which has not been reached. The exact relation of the ore to the rock is not therefore easily determined.

It appears altogether well established after a thorough examination of the various ore beds of New England, that they must have been produced from the decay of some contiguous rock formations; and that these in some instances were quartz rock, in others talcose and mica slates, and it may be in others the limestone. For always associated with the ore are found either fragments of these rocks, showing plainly their derivation, or the clays and "marls," so called—the result of their decomposition, are sometimes of a micaceous and frequently of a talcose

original decomposition. Although under great pressure, it is perhaps possible that nodules full of water may have been intensely heated without explosion. The occurrence of nodules thus filled was mentioned by the workmen as a very common occurrence. They have also been observed in Chittenden."

The very ingenious arrangement of Mr. Conant for washing the ore, has attracted much attention from visitors. A long box open at both extremities, with the sides perforated like a strainer, is made to revolve in an inclined position, while a stream of water passes through it. The ore is thrown in at the upper end, and is of course rolled over and downwards while being washed, and falls from the lower extremity into a shallow vat. The ore thus washed yields fifty per cent. of iron. Mr. Mitchell informs me concerning the *Forestville Furnace*, in which he was lately interested, that "its height is thirty feet, diameter at boshes, eight feet; height of hearth, five to five and a half feet. The ore used is a brown hematite yielding 50 per cent. of iron. It is found upon a sandy plain at the foot of the last range westward of hills forming the base of the Green Mountains. It occurs in masses, not veins, of from fifty to thousands of tons, embedded in yellow ochre, and covered with a deposit of gravel and boulders of quartz. It is in position and appearance similar to the bed at West Stockbridge, Massachusetts. Cost of mining, about one dollar and seventy five cents per ton, worth at the furnace two dollars and fifty cents washed. Charcoal five dollars per hundred bushels, yield of furnace five and a half to six tons per day. Cost of delivering in New York, including commission, weighing and wharfage in New York, seven dollars per ton. The iron made is principally No. 1, strong and fine grained, much stronger than the iron made from the primary ores. Our furnace has been in operation about twenty years. We are two hundred and fifty miles from New York city by way of Lake Champlain and the Northern Canal."

The furnaces in *Rutland county* are the farthest north in this range. The whole district, however, on the Canada line appears to abound in iron ore. An old furnace is standing at *Vergennes*, which was formerly supplied from the towns of *Bristol* and *Monkton* near by. These ores are associated with quartz rock. The Bristol ore was injured by manganese, and the bed at Monkton was badly situated for draining. *Colchester* and *Millon*, near the lake,

seen to offer great inducements for the establishment of furnaces. The Colchester hematite is now mined for a furnace, at Westport, on the other side of Lake Champlain, where it is used to advantage by F. H. Jackson, Esq., in mixture with the magnetic ores of Essex county, New York. Near Milton and Faifield there appears to be some promise of opening workable veins of *specular iron ore*, as this has already been met with in veins of uncertain extent. A specimen I have is of beautiful character, pure and rich, much resembling the iron mountain ore of Missouri. Good ore of several varieties appears to be abundant throughout this section, and its proximity to the lake is certainly very important for convenience of transportation, and for drawing supplies of fuel from the timbered country on its shores. The severities of the climate must necessarily be lessened in leaving the mountains and approaching the lake.

The furnace in *Troy* near Canada is on the serpentine range of the Green Mountains. The ore is a titaniferous magnetic ore, occurring in a vein lying nearly vertical in the serpentine, and following its range, along which it has been traced two miles. The vein is from three to five feet thick.—Professor Emmons in the Geological Report of the New York Survey, p. 346, speaks of it as from 10 to 15 feet in thickness, and sinking but a few feet into the serpentine. Veins in this rock generally appear to be very uncertain as to continuance.

In 1844, six hundred tons of pig iron and castings were made, and machinery has since been erected for the manufacture of wrought iron also. The ore is quite free from admixture with the serpentine.—I subjoin an analysis of a specimen by Mr Olmstead.

Per oxide of Iron.....	81.20
Protodoxide ".....	13.37
Titanic acid.....	4.10
Silica.....	1.33
	100.00
Metallic Iron.....	66.62

The ore works with great difficulty, making a thick pasty cinder and high iron. In the mass it probably contains a larger per centage of titanium than the specimen analysed afforded.

In the town of *Jay*, which adjoins *Troy*, veins of *Chromic iron ore* occur in the serpentine, which but just discovered by Professor Adams, are as yet too partially developed to determine their real importance. The largest vein is described to be from one to two feet wide. It is anticipated that from the high value of good chromic iron, which Professor Adams states is worth forty dollars per ton, these veins will prove of great consequence.

Concerning the *St. Johnsbury Furnace*, in the north eastern part of the state, I have no details. Professor Adams remarks that in *Waterford*, the adjoining town, some small isolated beds of bog ore have been found in the vicinity of the furnace of *St. Johnsbury*, and nearly exhausted. One yielded a few hundred tons. I understand the furnace is no longer in blast.

*Tyson's Furnace* in *Plymouth* on the east side of the mountains, owned by Isaac Tyson of Baltimore, Md., runs with hematite ores, which are found only a quarter of a mile distant. They resemble the ore of the west side of the Green Mountains, and like them are associated with manganese, which incrusts and is intimately mixed with them. In the vicinity of the furnace there are found boulders of magnetic iron ore, sometimes of several hundred weight each. They have been so abundant as to have added ma-

terially to the supplies of ore for the furnace; yet no veins have been found, notwithstanding diligent search has been made for them. Their discovery would have been a matter of no small moment, for from its purity and deficiency in manganese, this ore is extremely well adapted to mix with the highly manganeseous hematites.

*Carbonate of iron* is found in small veins near the furnace also, which, if it should prove abundant, would prove a valuable ore, though this too has rather a large per centage of manganese in the state of a carbonate. Its analysis, made in the *Ecole des Mines*, at Paris, in April, 1848, gave the following result:—

Carbonate of Iron.....	75	Iron.....	36.00
Carbonate of Manganese.....	10		
Carbonate of Magnesia.....	12		
Pyritous Copper.....	3	Copper.....	1.00
	100		

The furnace was erected in the year 1837, with hot blast, the consumption is said to be one hundred bushels of charcoal to the ton, which means no doubt the amount actually put into the furnace, no allowance being made for the great waste in handing;—with cold blast one hundred and fifty bushels. The iron made, which amounts to about three tons per day; while the furnace is in operation, is for the most part high iron of poor quality. The excess of manganese in the ore is no doubt the cause of the ill success that has attended the operations of this furnace, its effect being the same as in the *Wallingford* "black ore," before described as used at the *North Dorset Furnace*. The quality of the iron is of that silvery white high iron, much resembling iron made at the *Adirondac Furnace*, New York, and used in Jersey city for the manufacture of steel. H.

#### Improvement in Laying the Track of Railroads.

A patent was taken out two years since by J. El-nathan Smith, Esq., of the city of New York, for laying rails on vulcanised India rubber. The experiment has now been fully tested by the trial of a year or more on some of the roads, and the results have proved all that were anticipated. By reference to the advertisement of Mr. Smith in another column these may be seen concisely enumerated.

The suitability of the material for the purpose of lessening the wear and tear of rails and cars, as well as of the noise accompanying their motion, by the interposition of an elastic medium, may be inferred from our remarks upon the qualities of this prepared rubber, in the number of this Journal for May 5th.

We have examined a piece of it, that had lain under the rail of the *New Orleans and Carrollton Railroad*, from August, 1848 to the 30th April following; it had apparently lost none of its elasticity, and was uninjured, except a slight cut on the junction of the two rails. Mr. J. Hampson, the Engineer on this road, in a second letter dated 30th April, speaks of its application in the highest terms.

We have a letter also before us of the 29th Nov., 1848, signed Andrew S. Mathews, Engineer P. and E. R. R., in which the writer speaks in similar terms of the beneficial effects arising from its use on portions of the *Stonington Railroad*.

The subject no doubt will attract the particular attention of railroad companies, especially of those whose roads, from the imperfect manner in which they are constructed, communicate an oscillatory motion to the car which greatly increases the wear and tear of the road, and annoys the traveller by a most disagreeable noise and jar. H.

#### The Tuscan Furnaces.

These blast furnaces are somewhat variable in form. They are built round inside, and the basin at the bottom\* is terminated behind by a half-circle. In the new furnace of *Follonica*, called *San Leopoldo*, and that of *Cecina*, this basin is longer—from front to back—than wide; but in the old furnace of *Follonica* it is wider than long. The diameter of the tunnel-head is generally the same as that of the basin, or a mean between its length and width.—The diameter across the boshes is twice and two-thirds that of the tunnel-head. In the furnace of *Cecina* the boshes are just half way up the stack; in the old furnace of *Follonica* they are lower by about one-fortieth of the whole height; in the *San Leopoldo* they are lower than the middle by about one twenty-second of the whole height. This last furnace, the most modern of all, as it was built in 1836, is the only one, which can really be said to have a hearth. The walls of this are nearly vertical, and their height are about one-third of the space from the top of the basin to the boshes.

The principal dimensions are comprised in the following table.

	Furnace of Cecina.	Old Furnace of Follonica.	Furnace of San Leopoldo.
Basin—length from front to back.	2.39	2.29	2.29
Basin—width.....	2.1	2.67	2.1
Diameter at the upper part of the hearth.....	.....	.....	2.87
Diameter at the boshes.....	5.93	7.1	6.9
Diameter at the tunnel-head.....	2.1	2.49	2.49
Height of the basin.....	1.43	1.73	1.77
Height of the hearth above the basin.....	.....	.....	3.1
Height of the boshes above the bottom-stone.....	11.86	12.8	11.66
Total height of the furnace.....	23.71	26.96	24.34

The stacks are generally built of common bricks; the lining and lower part (corresponding to the hearth) of refractory slates. All these furnaces being located in low and unhealthy places, which cannot be inhabited in the summer, each blast continues only seven or eight months. Consequently undergoing such changes of temperature, their in-walls rapidly give out; a new hearth has to be put in every year; and the lining lasts only four or five years.

The blowing machines are different at the different works; they have been gradually perfected as the production of iron has increased. At *Valpiana* and *Pescia* the blast is raised by wooden tubs (*trompes*). At *Cecina* the furnace is blown partly by wooden tubs and partly by a hydraulic machine composed of chambers, which are filled alternately with air and water. At *Follonica* the blowing apparatus is a machine with square pistons moving in marble boxes. That of *San Leopoldo* consists of cast iron cylinders.

These cylinders for the furnace *San Leopoldo* are estimated to furnish 1400 cubic feet of air per minute calculated at the temperature of 0° cent. and at a pressure of 1.14 lbs. to the square inch: but the actual amount seems to be short of 1000 cubic feet; and the pressure probably exceeds that given. Two

\* In the description of these furnaces a distinction is made between the receptacle at the bottom of the hearth and the hearth itself. The one is called *creuset*, and its depth or height I understand to be that of the dam-stone; the other is called *ouvrage*, and means literally the working place.

towers are used, one on each side; they incline downward 15°. The blow pipes are rectangular, except the upper edge, which is half circular; their width is 2-1 inches and their height 2 inches. The towers are of copper, and made hollow for a current of water. There is a heating oven for the blast by the side of the tunnel head; but the arrangement was very imperfect at the time these observations were made. The air carried up in a ten-inch pipe was divided into three pipes in the oven, whose aggregate area was only one-third of the main pipe. The temperature of the blast was supposed to be only 160° Centigrade (320° Fahrenheit).

The old furnace of Follonica was blown by four square marble boxes, measuring 3-82 feet on the side. They are made open at the top. The pistons move alternately, the length of their stroke is 3-34 feet, when blowing cold the number of lifts is 13½ per minute. These should all furnish 2183 cubic feet at 15° Cent. or 2067 cubic feet at 0° Cent. One blow pipe only is used, 3 inches square; the tower is inclined downward 16°. The pressure is rudely estimated at 1½ lbs. to the square inch. From these data the volume of air at 0° Cent. is found to be 1024 cubic feet. This great difference in the calculation is the result of the construction of the machine itself. The blast is heated in an oven directly over the tunnel head. The arrangement of the pipes we should consider very imperfect. The temperature is estimated without any certain data at 230° Cent. (446° Ft.); but the blowing machine being greatly retarded when all the blast passed through the heating pipes, a part is shut off from them; and the machine, running 12 strokes a minute, is estimated to blow 1,114 cubic feet of hot air and cold air mixed, whose supposed temperature is 87° Centigrade (188° Ft.).

It is hardly worth while to enter into the full details of the blowing machinery of all these furnaces, as they are given in the description of M. Garella. The data on which his calculations are based are by no means certain, and the results are only approximate. The Cecina is blown with one tower only; the quantity of air is estimated at 840 cubic feet per minute, the pressure not known. The Valpiana received only about 750 cubic feet. The blast for these furnaces was cold.

The Tuscany furnaces work generally with great regularity, particularly when the furnaces are new; but as they become worn and altered in form by the changes of temperature due to their frequent blowing out, they are more subject to irregularities, especially in the descent of the charges, involving increased consumption of coal and a diminished daily production of iron.

The weight and number of charges per day, and the proportion of the materials which compose them, vary with the dimensions of the furnace and the quality of iron desired.

1. At the San Leopoldo, blowing hot blast and making foundry iron, as is generally the case, the charge consists of—

3 measures of ore....weighing.. 266 lbs.  
2½ " charcoal, " 190 "  
Calcareous tufa..... " 13½ "

The number of charges per day are 150; the average yield is 27,770 lbs. of cast iron, with a consumption of 39,475 lbs. of ore, and 28,462 lbs. of charcoal; or 57-14 of cast iron for 100 of ore, and 125 of charcoal for 100 of iron.

Making forge pig, the charge consists of—

3 measures of ore....weighing.. 266 lbs.  
2 " charcoal " 152 "  
Calcareous tufa..... " 13½ "

The number of charges per day are 165; the average yield is 25,190 lbs. of cast iron, with a consumption of 43,392 lbs. of ore, and 25,147 lbs. of charcoal; or 58-05 of cast iron for 100 of ore, and 99-43 of charcoal for 100 of iron.

2. At the old furnace of Follonica, blowing hot blast, the charge in 1838 was as follows:

6 measures of ore....weighing.. 554 lbs.  
4 " charcoal " 303 "  
Calcareous tufa..... " 30-3 "

The number of charges per day are 85; the average yield is 29,032 lbs. of cast iron with a consumption of 47,096 lbs. of ore and 25,806 lbs. of charcoal, or 61-63 of cast iron for 100 of ore, and 88-9 of charcoal for 100 of iron.

With cold blast the charge consists of—

3 measures of ore....weighing.. 266 lbs.  
2 " charcoal " 152 "  
Calcareous tufa..... " 15 "

The number of charges per day are 200; the average yield is 29,654 lbs. of cast iron, with a consumption of 53,130 lbs. of ore, and 30,360 lbs. of charcoal; or 55-81 of cast iron for 100 of ore, and 102-4 of charcoal for 100 of metal.

3. Finally at the furnace of Cecina, blown cold, the charge consists of—

3 measures of ore....weighing.. 266 lbs.  
2 " charcoal " 152 "  
Quick lime..... " 7-6 "

With the wind from the machine and from the wooden tubs 138 charges are run every 24 hours: the average yield is 20,873 lbs. of cast iron, with a consumption of 36,660 lbs. of ore, and 20,873 of charcoal; or 56-93 of cast iron for 100 of ore, and 100 of charcoal for 100 of metal.

When the furnace is blown only by the wind from the machine, only 109 charges are run per day, and the yield is 16,520 lbs. of iron, with a consumption of 28,996 lbs. of ore, and 16,999 of charcoal; or 56-97 of cast iron for 100 of ore, and 102-9 of charcoal for 100 of metal.

The cinder is for the most part fluid, but small in quantity; so that it has to be worked up about every two hours to facilitate its running and to keep the hearth clean. It is also necessary to keep the passage always open for the flame under the tymp-stone. In making forge-pig the furnace is usually tapped about every three hours. The hearth is never suffered to get very full of metal. The blast is never taken off except when the metal is run out.

In running forge-pig, the most frequent varieties obtained are mottled, ribboned and white irons.—They change with the quality of the charcoal; and it is not desirable to run on either alone. A too great production of white iron indicates a bad running, particularly in the old Follonica furnace. A spungy white iron, sometimes obtained, is always a sign of bad working, coming from an overcharge of ore, or a slip in the furnace.

Grey iron is obtained by increasing by a quarter the proportion of charcoal in the charges; it is never of a very decided grey. In the second fusion it loses its color and becomes white. The grey iron of the first fusion of the furnace San Leopoldo is soft and works well; it has a fine grain and takes readily the most delicate impressions.

The next number will contain the tables of the workings of these furnaces, with further remarks as to the nature of their operations.

H.

#### Adirondac Steel Works.

Through the kindness of our friend, David Henderson, Esq., Agent for the above works in Jersey City, we have been favored with an opportunity of examining them the present week; and as they are

the only works in the United States which have successfully persevered in the manufacture of cast steel, and will consequently have the honor of establishing this highly important branch of manufacture in this country, a short account of the works we think will be received with no little interest by many of our readers.

For several years, the Adirondac Iron Company have been contending with extraordinary perseverance in attempts to reduce with economy the very refractory ores found in enormous quantities on their lands in the northern part of Essex county, in the State of New York. These ores will be particularly described in the papers on the Iron Manufacture of the United States. At present the company have a furnace in operation 50 miles back from Lake Champlain, which makes with great difficulty from 1½ to 3 tons of pig iron a day. This is puddled and made into bar iron on the spot, then transported to Jersey city to be converted into steel. The ores are magnetic iron ores, and charged with titanium, and prove to be well adapted for the manufacture of a superior quality of steel.

The first experiments made with reference to this object, were by Joseph Dixon, Esq., of Jersey City, well known for his original genius in the mechanic arts, as well as for his familiarity with the sciences. His blow pots, or black lead crucibles, manufactured in Jersey City, we believe are unsurpassed for their refractory qualities by any other whatever. We have had occasion to prove them in severe tests in anthracite furnaces. In one of these pots he once melted over 20 lbs. of the bar iron made from the Adirondac ores. Experimenting upon the ores and the iron, he succeeded in making some cast steel of good quality and great hardness. From his success, he was engaged by the Adirondac Company to build furnaces on a considerable scale in Jersey City to submit the matter to a thorough trial. This he undertook on a plan of his own, intending to use anthracite, never before applied to this manufacture—and this in the face of all the failures previously made in this country, as well as the prevalent impressions derived from the English manufactures, that the experience of successive generations of workmen is requisite for success in this difficult art.—Without experience of his own, and without workmen who had ever seen the process of making cast steel, Mr. Dixon commenced the works last summer. They went into operation early the present year, and for some months have been going on with complete success.

They consist of a cementing furnace, built of small size, as experimental merely, into which eleven tons of bar iron are charged every two weeks, and taken out converted into blistered steel. This furnace has been at work nearly a year and a considerable quantity of blistered steel is already on hand. This steel is broken up into small pieces, and put into blow pots which hold 40 lbs., or into larger ones holding 60 lbs. These, to the number of 16, are placed in as many little furnaces, whose tops are on a level with the ground, and around which circulates the air before being blown in at the towers. In two hours, the contents are melted and the steel is poured or "teemed" into the ingot moulds which are three, and some four inches square.

The ingots are then re-heated in small reverberatory and hollow fires, and drawn out under hammers weighing from 125 to 600 lbs., and running at the rate of from 150 to 350 strokes a minute. In this way they are finished into bars of all shapes and sizes. The present production is about 2500 lbs. a day.

In this process, the iron bars gain in the converting furnace of carbon absorbed, about 4 per cent, in weight. In melting the loss is about half a pound to a pot of 40 lbs.; and in the re-heating and hammering the loss is from 6 to 8 per cent.

The quality of the steel has been thoroughly tested for many purposes, and no instance of failure is known. It is in demand by those who have been induced to try its qualities, and is now purchased by them in preference to the best English cast steel. The highest testimonials are given by the proprietors of the Novelty Works, of New York City, by Messrs. E. P. Richards and Richardson, of Utica, also by many others.

A small bar was lately sold to Mr. Quillet, of New Brunswick, New Jersey.—He returned with a coil of spring for clocks and watches which he had manufactured from it, which weighed nine pounds. It had been rolled out quite thin to a width of  $2\frac{1}{2}$  inches, and was in one piece of several hundred feet in length, making a coil of about 9 inches diameter;—on the edges it was perfectly free from all irregularities, as smooth almost as a finished spring. Mr. Quillet said he could easily have rolled a piece out to the length of 1,400 feet.

It is not at all surprising that this steel should be pronounced superior to the best English steel we get; but it is surprising that with the great variety of magnetic ores we possess, we should not have made such steel for ourselves long ago. In the Transactions of the Institution of Civil Engineers of London, it was shown in the year 1812, that of the 25,000 tons of steel made annually in Great Britain, not more than 2,500 were made from the best quality of Swedish iron; the rest was made from inferior charcoal iron from Russia and Germany and from English iron; which was not well calculated for converting. With ores such as are found in many of our states, no doubt equal to the best Swedish for this purpose, and with a sufficiency of them at the lowest prices, to insure against inferior mixtures, it is to be hoped this successful experiment of Mr. Dixon and the Adirondack Steel Company will encourage this new branch of manufacture, that we shall soon be independent of foreign supplies of this important article.

H.

now; we hear of no complaints on the subject of wages—a circumstance which cannot fail to add to the chances of steadiness in the trade.—*London Mining Journal*.

**Birmingham, April 12.**—The third meeting of the ironmasters was held here to-day; the attendance was the largest that has been known for several years. Affairs took rather a different turn to what was expected, having in mind their appearance at Wolverhampton yesterday. Here the ironmasters so far from showing a disposition to yield, manifested some of them a disposition to advance. Seeing this, orders were freely given in customary quantities by manufacturers; in fact, they were rather larger than otherwise. Present prices may, therefore, be considered very firm, and, unless under extraordinary circumstances, it may fairly be assumed that they will stand throughout the quarter. The largest ironmasters, who may of course be relied upon, report that the trade is in what may be considered a healthy state. This will convey a better idea of the actual condition of the trade—certainly a more faithful one—than any of the elaborate statements which have been recently put before the public. The present prices are—Staffordshire bars, 7l. 10s; hoop, 9l., and sheets 10l. Lower figures may have been taken, but the foregoing are prices recognised by the great houses. As already stated, pigs are small in stock, and prices have an upward tendency; the present quotation is about 3l. 15s. Accounts have been paid with customary punctuality. The final meeting of the trade takes place at Dudley on Saturday (this day).—*Ibid.*

#### Engine Drivers.

The duties which the engine driver has to perform are not only of vital importance, but of a nature which peculiarly illustrates the calm, unpretending bulldog courage, indigenous to the most healthy climate of the British Isles. Even in bright sunshine to stand like a figure-head of a ship—formost on a train of enormous weight, which, with fearful momentum, is rushing forward faster than any race-horse can gallop, requires a cool head and calm heart; but to proceed at this pace in dark and foggy weather into tunnels, along embankments, and thro' deep cuttings, where it is impossible to foresee any obstruction, is an amount of responsibility which scarcely any other situation in life can exceed; for not only is a driver severely, and occasionally without mercy, punished for any negligence he himself may commit, but he is invariably sentenced personally to suffer on the spot for any accident that from the negligence of others may suddenly befall the road along which he travels, but over which he has not the slightest control. The greatest hardship he has to endure, however, is from cold, especially that produced in winter by evaporation from his drenched clothes passing rapidly through the air. Indeed, when a gale of wind and rain from the northwest, triumphantly sweeping over the surface of the earth at its ordinary rate of say 60 miles an hour, suddenly meets the driver of the London and North-Western, who has not only to withstand such an antagonist, but to dash through him, and in spite of him to proceed in an opposite direction at the rate of say 40 miles an hour—the conflict between the wet Englishman and *Aeolus*, tilting by each other at the combined speed of 100 miles an hour, forms a tournament of extraordinary interest.—*Stokers & Pakers*.

#### East Tennessee and Georgia Railroad.

We had Saturday the pleasure of seeing and conversing with Wm. G. Bonner, Esq., the Chief Engineer of the Georgia and East Tennessee railroad, who represents that work to be in a flourishing condition. It has finally been determined to intersect the State road at Dalton, from which point to Knoxville the distance is one hundred and twenty miles. The whole road is under contract, and not the least doubt is entertained of its completion within a reasonable time. Mr. Bonner has made some changes in the old location, one of which at a considerable saving of expence, causing it to pass through the flourishing town of Cleveland. The iron for this road will be furnished by the works in Tellico, Tenn., where a rolling apparatus is to be erected for the purpose. When this road shall be completed through Abingdon to Lynchburg and Richmond, it will present much the shortest route for travellers going north, who find themselves at Atlanta or any

other point of our line of railroads leading from thence into Tennessee.—*Savannah Republican*.

#### Railroad Improvements.

The Civilian says, the curves on the Baltimore and Ohio Railroad, between Sykesville and Ellerott's Mills, will soon be so much straightened as to enable the cars to reach Cumberland in less time, by nearly an hour, than heretofore. In consequence of this, the railroad company are about to erect a Dining House, at Martinsburg, after a northern style in order to enable passengers to refresh themselves at a reasonable hour. We have also heard that the company intend building another engine house at Martinsburg.

#### Railroad.

A meeting of the stockholders of the Scioto and Hocking Valley railroad, is in session, in this city, as we go to press. There is a goodly representation from Portsmouth, Lancaster, &c., and all appear animated with the prospect ahead.—*Scioto Gazette*.

#### Railroad Contracts.

We learn from the Cumberland Civilian, that on Wednesday, the Board of Directors of the Baltimore and Ohio Railroad made the following awards of work, on the line of the road west of Cumberland.

#### Graduation.

	Section.
Humbird & Atkinson	1
" "	2
John McManus	6
" "	7
" "	8
Mulligan & Martin	10
Edgerton, Lockwood & Marsh	30
Langton, Urban & Long	31
Downey, Everett & Hitchcock	32
Millikin, Morrison & Urban	38
John C. Rodgers	34
Zachariah Gatton	35
G. B. Sherman & Co.	35
Langton, Urban & Long	36
Downey, Everett & Hitchcock	38
Millikin, Morrison & Urban	39
Quigg & Clarke	40
" "	41
Thos. M. MacCubbin	42
Samuel Bryan	45

#### Bridge Masonry.

G. S. Marsh & Co.	1
William Kelly	6
" "	7
Patrick Gallagher	10
Edgerton, Lockwood & Marsh	30
P. Donnelly & Co.	40
Quigg & Clarke	41
Thos. M. MacCubbin	42

The next letting will be made in the month of June. We suppose the work will now be commenced at an early period.

#### Cheshire Railroad.

The following gentlemen were elected Directors of the Cheshire Railroad Company for the current year, at a meeting of the corporation the present week:

T. M. Edwards, B. F. Adams, S. Hale Keene, Thos. Thatcher, Boston, Hiram Howe, Water town, E. Murdock, Jr., Winchester, George Huntingdon, Walpole.

T. M. Edwards is President of the Company.

The annual meeting of the stockholders of the New York and New Haven railroad company was held in this city on Friday last, for the purpose of electing a board of directors for the ensuing year. The following named gentlemen were elected: Robert Schuyler, President; Thomas Ketchum, Anson G. Phelps, Elisha Townsend, Jonathan Sturges, of New York; Henry S. Sanford, of Stamford; Wm. P. Burwell, of Bridgeport; Wm. W. Boardman, of New Haven; John E. Thayer, of Boston.

Twelve section of the Western railroad was put under contract on Saturday last, and the work will be commenced immediately. The contracts only embrace the grading.—*Dayton Trans. 25th ult.*

Railway Share List,  
ON A PAR OF \$100 ACCORDING TO THE LATEST SALES.

NAME OF COMPANY.	Length of line.	Length of branches.	Miles finished.	Cost of road and equipment.	Cost per mile.	Dividends in 1848.	Price of shares.	NAME OF COMPANY.		Length of line.	Length of branches.	Miles finished.	Cost of road and equipment.	Cost per mile.	Dividends in 1848.	Price of shares.	
								78 a 81	Mad River and Lake Erie	102	102	56	\$1,106,121	19,700	80	80	
Atlantic and St. Lawrence	146	36	In progress	\$1,606,196	100,000	1 5-9	70	Mansfield and Sandusky	56	56	221	221	221	221	221	221	221
Androscoggin & Kenebec	55	6	In progress	1,264,520	34,000	8	82	Michigan Central	70	70	101	101	101	101	101	101	101
Albany and Schenectady	16 $\frac{1}{2}$	16 $\frac{1}{2}$	1,125,886	43,300	2 9-10	80 a 81	Michigan Southern	70	70	101	101	101	101	101	101	101	101
Auburn and Rochester	78	78	821,313	26,000	4 $\frac{1}{2}$	Leas'd to	Mississippi	30	Mississippi	30	30	525,063	36,200	10	10	10	10
Auburn and Syracuse	26	26	1,125,886	43,300	2 9-10	Western railroad.	Nashua and Lowell	14 $\frac{1}{2}$	Nashua and Lowell	14 $\frac{1}{2}$	12	unfinished	12	12	12	12	12
Attica and Buffalo	31 $\frac{1}{2}$	31 $\frac{1}{2}$	1,125,886	43,300	2 9-10	1,125,886	Concord to Leb'n.	69	Concord to Leb'n.	69	20	499,065	24,998	6	6	6	6
Allegheny and Portage	36	36	1,125,886	43,300	2 9-10	1,125,886	N. Bedford and Taunton	26	N. Bedford and Taunton	26	26	621,488	23,900	5 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{1}{2}$	5 $\frac{1}{2}$
Albany and W. Stockb.	38 $\frac{1}{2}$	38 $\frac{1}{2}$	1,924,701	50,000	.....	1,924,701	N. Y. & N. Haven (14 mls.)	62	N. Y. & N. Haven (14 mls.)	62	28	1,125,886	10	90	90	90	90
Bangor and Oldtown	11 $\frac{1}{2}$	11 $\frac{1}{2}$	2,013,687	73,200	8	1,125,886	New Haven Canal	59	New Haven Canal	59	7	2,187,829	33,100	37	37	37	37
Boston and Lowell	25 $\frac{1}{2}$	27 $\frac{1}{2}$	600,000	28,500	7	600,000	Northern (Ogdensburg)	80 $\frac{1}{2}$	Northern (Ogdensburg)	80 $\frac{1}{2}$	200	3,579,567	44,600	58 $\frac{1}{2}$	58 $\frac{1}{2}$	58 $\frac{1}{2}$	58 $\frac{1}{2}$
Boston and Maine	74 $\frac{1}{2}$	57 $\frac{1}{2}$	3,571,832	45,000	8 $\frac{1}{2}$	3,571,832	N. York and Harlem	29	N. York and Harlem	29	29	1,125,886	10	107 a 108	107 a 108	107 a 108	107 a 108
Boston and Worcester	44 $\frac{1}{2}$	22	4,650,393	70,000	8 $\frac{1}{2}$	4,650,393	New Jersey	17	New Jersey	17	17	1,125,886	10	107 a 108	107 a 108	107 a 108	107 a 108
Boston and Providence	41	6 $\frac{1}{2}$	3,031,106	63,800	6 $\frac{1}{2}$	3,031,106	Newark and Frenchtown	51	Newark and Frenchtown	51	51	1,125,886	10	107 a 108	107 a 108	107 a 108	107 a 108
Bristol Branch	12	12	.....	.....	.....	.....	N. Orleans and Carrollton	50	N. Orleans and Carrollton	50	50	1,125,886	10	107 a 108	107 a 108	107 a 108	107 a 108
Bost., Concord and Mont.	90	38	In progress	.....	.....	.....	Old Colony	37 $\frac{1}{2}$	Old Colony	37 $\frac{1}{2}$	45	2,080,903	46,200	6 $\frac{1}{2}$	6 $\frac{1}{2}$	6 $\frac{1}{2}$	6 $\frac{1}{2}$
Berkshire	21	21	600,000	28,500	7	600,000	Oswego and Syracuse	41	Oswego and Syracuse	41	41	1,125,886	10	107 a 108	107 a 108	107 a 108	107 a 108
Buffalo and Niagara	22	22	250,396	11,500	6 1-3	250,396	Portland, Ports. and Saco	51	Portland, Ports. and Saco	51	51	1,350,000	26,400	6	96 $\frac{1}{2}$	96 $\frac{1}{2}$	96 $\frac{1}{2}$
Baltimore and Susqueh'a.	36	36	.....	.....	.....	.....	Peterboro' and Shirley	12	Peterboro' and Shirley	12	12	208,311	17,300	.....	.....	.....	.....
Beaver Meadow	26	26	.....	.....	.....	.....	Pittsfield and N. Adams	18 $\frac{1}{2}$	Pittsfield and N. Adams	18 $\frac{1}{2}$	18 $\frac{1}{2}$	447,755	24,000	.....	.....	.....	.....
Baltimore and Ohio	178	178	.....	.....	.....	.....	Providence and Worcester	43 $\frac{1}{2}$	Providence and Worcester	43 $\frac{1}{2}$	43 $\frac{1}{2}$	1,873,895	43,000	82 $\frac{1}{2}$	82 $\frac{1}{2}$	82 $\frac{1}{2}$	82 $\frac{1}{2}$
Balt. and Wash. Branch.	31 $\frac{1}{2}$	31 $\frac{1}{2}$	13,136,940	62,300	.....	13,136,940	Patterson and Hudson R.	16 $\frac{1}{2}$	Patterson and Hudson R.	16 $\frac{1}{2}$	16 $\frac{1}{2}$	1,125,886	10	107 a 108	107 a 108	107 a 108	107 a 108
Calais and Baring	3	3	.....	.....	.....	.....	Philadelphia and Trenton	28	Philadelphia and Trenton	28	28	1,125,886	10	107 a 108	107 a 108	107 a 108	107 a 108
Concord	34	34	.....	.....	.....	.....	Philad. Wilm. and Balt.	97	Philad. Wilm. and Balt.	97	97	6,173,851	66,000	54	54	54	54
Cheshire	54	54	1,905,456	35,306	.....	1,905,456	Philadelphia City	6	Philadelphia City	6	6	1,125,886	10	107 a 108	107 a 108	107 a 108	107 a 108
Connecticut and Passump.	115	40	20,900	.....	.....	20,900	Philad. Germ. and Nor.	17	Philad. Germ. and Nor.	17	17	1,125,886	10	107 a 108	107 a 108	107 a 108	107 a 108
Connecticut River	50	52	1,589,184	30,500	8	1,589,184	Philadelphia and Reading	17	Philadelphia and Reading	17	17	1,125,886	10	107 a 108	107 a 108	107 a 108	107 a 108
Cape Cod Branch	28	28	587,116	20,900	.....	587,116	Penn Township	2	Penn Township	2	2	1,125,886	10	107 a 108	107 a 108	107 a 108	107 a 108
Corning and Blossburgh	40	40	.....	.....	.....	.....	Petersburg	59	Petersburg	59	59	946,361	16,040	.....	.....	.....	.....
Cayuga and Susquehanna	28 $\frac{1}{2}$	28 $\frac{1}{2}$	.....	.....	.....	.....	Portsmouth and Roanoke	76 $\frac{1}{2}$	Portsmouth and Roanoke	76 $\frac{1}{2}$	76 $\frac{1}{2}$	1,519,140	20,460	.....	.....	.....	.....
Camden and Amboy	61	61	96 $\frac{1}{2}$	3,200,000	33,000	130 a 135	Ponchartrain	4 $\frac{1}{2}$	Ponchartrain	4 $\frac{1}{2}$	4 $\frac{1}{2}$	701,827	28,000	.....	.....	.....	.....
Trenton Branch	6 $\frac{1}{2}$	6 $\frac{1}{2}$	.....	.....	.....	.....	Pt. Hud., Jack. and Clint.	28	Pt. Hud., Jack. and Clint.	28	28	1,474,004	19,459	.....	.....	.....	.....
New Brunswick Br.	29	29	.....	.....	.....	.....	Rensselaer and Saratoga	25	Rensselaer and Saratoga	25	25	659,668	32,100	.....	.....	.....	.....
Columbia	82	82	.....	.....	.....	.....	Rich. Fred. and Potomac	75 $\frac{1}{2}$	Rich. Fred. and Potomac	75 $\frac{1}{2}$	75 $\frac{1}{2}$	877,484	39,886	.....	.....	.....	.....
Camden and Woodbury	9	9	.....	.....	.....	.....	Richmond and Petersburg	22	Richmond and Petersburg	22	22	331,036	15,000	.....	.....	.....	.....
Cumberland Valley	52	52	.....	.....	.....	.....	Sullivan	28	Sullivan	28	28	1,125,886	10	107 a 108	107 a 108	107 a 108	107 a 108
Carbondale & Honesdale	26	26	.....	.....	.....	.....	South Shore	11 $\frac{1}{2}$	South Shore	11 $\frac{1}{2}$	11 $\frac{1}{2}$	255,748	22,200	23 $\frac{1}{2}$	23 $\frac{1}{2}$	23 $\frac{1}{2}$	23 $\frac{1}{2}$
Chesterfield	12	12	150,000	13,500	.....	150,000	Stony Brook	13	Stony Brook	13	13	246,659	19,000	.....	.....	.....	.....
City Point	91	91	195,867	15,919	.....	195,867	Saratoga and Washington	40	Saratoga and Washington	40	40	948,372	23,700	.....	.....	.....	.....
Central of Georgia	191	191	.....	.....	.....	.....	Syracuse and Utica	53	Syracuse and Utica	53	53	1,968,036	37,060	.....	.....	.....	.....
Central of New Jersey	63	36	.....	.....	.....	.....	Schenectady and Troy	20 $\frac{1}{2}$	Schenectady and Troy	20 $\frac{1}{2}$	20 $\frac{1}{2}$	659,668	32,100	.....	.....	.....	.....
Dorchester and Milton	34	34	114,224	35,100	.....	114,224	Saratoga and Schenectady	22	Saratoga and Schenectady	22	22	331,036	15,000	.....	.....	.....	.....
Detroit and Pontiac	25	25	.....	.....	.....	.....	Summit	2	Summit	2	2	1,125,886	10	107 a 108	107 a 108	107 a 108	107 a 108
Eastern	54	19 $\frac{1}{2}$	73 $\frac{1}{2}$	8	99 $\frac{1}{2}$	19 $\frac{1}{2}$	South Shore	11 $\frac{1}{2}$	South Shore	11 $\frac{1}{2}$	11 $\frac{1}{2}$	255,748	22,200	23 $\frac{1}{2}$	23 $\frac{1}{2}$	23 $\frac{1}{2}$	23 $\frac{1}{2}$
Essex (Salem to Law.)	22 $\frac{1}{2}$	22 $\frac{1}{2}$	421,574	18,700	.....	421,574	Schuylkill Valley	14	Schuylkill Valley	14	14	1,125,886	10	107 a 108	107 a 108	107 a 108	107 a 108
Erie and Kalamazoo	33	33	.....	.....	.....	.....	Shamokin	22	Shamokin	22	22	1,125,886	10	107 a 108	107 a 108	107 a 108	107 a 108
Fall River	42	42	1,145,982	27,300	7 $\frac{1}{2}$	1,145,982	Swatara	4	Swatara	4	4	1,125,886	10	107 a 108	107 a 108	107 a 108	107 a 108
Fitchburgh	49 $\frac{1}{2}$	6 $\frac{1}{2}$	2,945,630	52,300	8 $\frac{1}{2}$	2,945,630	S. Carolina Main Stem	136	S. Carolina Main Stem	136	136	1,125,886	10	107 a 108	107 a 108	107 a 108	107 a 108
Franklin	22	22	284,115	13,530	.....	284,115	Columbia Branch	68 $\frac{1}{2}$	Columbia Branch	68 $\frac{1}{2}$	68 $\frac{1}{2}$	5,943,678	24,500	.....	.....	.....	.....
Greenville and Roanoke	21	21	.....	.....	.....	.....	Camden Branch	37 $\frac{1}{2}$	Camden Branch	37 $\frac{1}{2}$	37 $\frac{1}{2}$	1,125,886	10	107 a 108	107 a 108	107 a 108	107 a 108
Germantown Branch	6	6	.....	.....	.....	.....	Sangamon and Morgan	53	Sangamon and Morgan	53	53	1,125,886	10	107 a 108	107 a 108	107 a 108	107 a 108
Gaston and Raleigh	96	96	.....	.....	.....	.....	Taunton Branch	11	Taunton Branch	11	11	305,085	27,600	.....	.....	.....	.....
Georgia (Augusta to At'a)	171	171	.....	.....	.....	.....	Tonawanda	43 $\frac{1}{2}$	Tonawanda	43 $\frac{1}{2}$	43 $\frac{1}{2}$	974,865	22,400	.....	.....	.....	.....
Harrisburg and Lancaster	37	37	.....	.....	.....	.....	Troy										

**Returns of Railroad Companies.**

At the recent session of the Legislature of New York, the following law was passed, providing for more full returns from the several railroad corporations in the state:

**RAILROAD CORPORATIONS.**

**An Act to amend an act entitled "An act to authorise the formation of Railroad Corporations," passed March 27, 1848. Passed April 11, 1849.**

*The People of the State of New York, represented in Senate and Assembly, do enact as follows:*

**Section 1.** The twenty-eighth section of the act entitled "An act to authorise the formation of Railroad Corporations," passed March 27, 1848, is hereby amended so as to read as follows:

**Sec. 28.** Every Railroad Corporation shall make an annual report to the State Engineer and Surveyor, of the operations of the year, ending on the first day of January; which report shall be verified by the oaths of the Treasurer and acting Superintendent of operations, and filed in his office by the twentieth day of January, in each year, and shall state,

1. The length of the road in operation: the length of single track; the length of double track; the time when laid, and the weight of the rail per yard:

2. The capital stock, and the amount called and paid in:

3. The whole cost of the road, showing the amount expended for the purchase of lands, for grading, for expenses of engineering, for bridging, for masonry, for iron for superstructure, for buildings, for engines, for passenger and other cars respectively:

4. The amount and nature of its indebtedness, and the amount due to the corporation:

5. The number of through and way passengers:

6. The rate of fare for passengers, charged for the respective classes:

7. The amount received for the transportation of passengers, of property, of the mails, for interest, and from all other sources respectively:

8. The amount of freight, specifying the quantity in tons, of the products of the forest, of animals, of vegetable food, other agricultural products, manufactures, merchandise, and other articles:

9. The amount paid out for construction, for repairs of roadway, of buildings, of engineers, of cars, respectively; and for fuel, for taxes, for engines and firemen, for oil, for train conductors, baggage and brakemen, for State tolls, for interest, for salaries, and to what officers, or agents, and the amount paid out for all other purposes incidental to the business of transportation, so as to give a complete statement of the whole annual expenses of the corporation:

10. The number of engine houses and shops; of engines and cars, and their character:

11. The number of miles run by passenger, freight and other trains respectively, and the average rate of speed of passenger and freight trains, respectively:

12. The number of men employed, and their respective occupations:

13. The amount charged for depreciation of road, engines, cars, &c.; the number and amount of dividends, and when made:

14. The number of persons injured in life or limb, and the cause of the injury, and whether passengers or persons employed:

15. Whether any such accidents have arisen from carelessness or negligence of any person in the employ of the corporation, and whether such person is retained in the service of the corporation.

**Sec. 2.** It shall be the duty of the State Engineer and Surveyor to arrange the information contained in such reports in a tabular form, and prepare the same, together with the said reports, in a single document, for printing for the use of the Legislature.

**Sec. 3.** The provisions of this act shall apply to all existing railroad corporations, and the report of said existing railroad corporations, made in pursuance of the provisions of this act, shall be deemed to be a full compliance with any existing law, or resolution requiring annual reports to be made by such corporation.

**Sec. 4.** The provisions of any act inconsistent with this act, are hereby repealed.

**Sec. 5.** This act shall take effect immediately.

From the data to be furnished by the required returns, something like accurate knowledge of the condition and value of each road may be ob-

tained. If the returns were required to show the amount of freight carried each way, they would furnish some interesting data in regard to the trade of the country. By this means, some idea might be formed as to the comparative value of the products of the interior brought to market, the value of property sent from the Atlantic seaboard to the interior for consumption. Information of this sort is of interest and value to the whole country, and is suggestive of important ideas touching upon production and industry. The agency of the railway will be more judiciously sought for wherever the productions of the interior are capable of being rapidly and profitably increased.

**Portsmouth and Concord Railroad.**

The annual meeting of the stockholders of the Portsmouth and Concord railroad was held at Franklin Hall in Portsmouth, agreeably to notice, on Wednesday, 9th inst., at 2 o'clock in the afternoon. A large number of stockholders attended. J. W. Emery was chosen clerk, and the following persons directors:

Alfred W. Haven, Portsmouth; Alexander Ladd, do; Josiah G. Hadley, do; Joshua W. Peirce, Greenland; Richard H. Ayer, Manchester; Joseph P. Stickney, and Josiah Minot, Concord.

The board is the same as last year, with the exception of R. H. Ayer, Esq., in the place of J. N. Handy, Esq., who declined being a candidate.

The annual report of the directors to the stockholders was read and accepted.

The following resolution being offered, was unanimously adopted:

Resolved, That we regard the completion of the main road to Concord as the first and most important object, and that all means and efforts, except those on the line of the branch, should be applied for that purpose, and the directors are requested to act accordingly.

The following resolutions were offered by a stockholder from Concord, and unanimously adopted:

Resolved, that the directors, as soon as practicable, cause the unfinished portions of the road between Raymond and Concord to be put under contract.

Resolved, That the treasurer proceed at once to collect by law all assessments in arrear.

Hon. Isaac Hill was present, and addressed the meeting on the importance of the enterprise, promising to do all in his power towards opening the most direct communication between Concord and the seaboard. He said that the introduction of railroads into New Hampshire has doubled the value of property in our state in the last ten years. No railroad that has been constructed promises to be of greater utility to the state than the Portsmouth and Concord road. He specified the great saving in the expense of the single article of plaster, as illustrative of the general benefits the citizens of the interior will derive from receiving articles of heavy merchandise through Portsmouth. The benefits were not to be confined to our own state; the citizens of Vermont, and the west, would avail themselves of its advantages. He spoke of one establishment in Vermont which anticipates the saving of thousands of dollars a year by receiving their heavy freight over the Portsmouth road, which now comes by the way of Boston. He was gratified by the encouraging statements made in the report, some of which were new to him, and had confidence not only in the speedy completion of the road, but also in the value of the stock.

From the report of the directors we learn that early in the last year the work was commenced at the upper end of the route, near Concord, and has been carried on there and also at the lower end as rapidly as means would allow.

The road is now graded nearly up to Raymond, twenty-three miles, and one-half of the distance from Portsmouth to Concord. Five thousand dollars will complete the grading, ready for the rails to Raymond. The iron and materials for superstructure for the distance from Portsmouth to New Market, ten miles, have been purchased and are ready for use. In addition to which, sufficient iron to complete the track to Epping, 7½ miles, has been con-

tracted for and will be ready for use as soon as needed. The track is now being laid in order for operation, and the directors hope to be able to complete the road to New Market in August, and to Epping in September next, and to put it in operation at that time.

The land damages from Portsmouth to Raymond with the exception of \$4,010 98, have been paid, and depots at Greenland and New Market have been erected, and one at Epping is now building.

Most of the grading and a great portion of the masonry at the upper end of the route between the Merrimac river and Suncook village, a distance of five miles, have been done. Between this last point and Raymond is a distance of seventeen miles, on which little has yet been done.

The whole amount thus far expended on the road is \$263,932 21, of which has been received from assessments on stock the sum of \$215,194 75, leaving an outstanding debt of \$48,730 46. All this debt has arisen from purchases of iron contracted for, in anticipation of assessments. All the funds raised from subscriptions at the upper end of the road are entirely expended there. The amount due on good subscriptions at the present time is estimated at \$330,000.

By deducting from this sum the amount of the present debts and liabilities of the corporation as before stated, there remains of the subscriptions the sum of \$281,000 applicable to the further prosecution of the work. With this amount it is believed that the work may be carried on as fast as practicable, with a safe confidence in the final completion of the road to Concord.

At the last session of the legislature, an act was passed authorising other railroad corporations in this state to make loans to this corporation. Under the authority of this act, a loan of \$50,000 has been made by the Concord railroad, for the term of 14 years, at the same rate of interest as the dividends on the stock of the Portsmouth and Concord road, and payable at the same time. As required by the by laws the individual liability is excepted. By this loan, the above sum in ready means has been placed at the disposal of the corporation in addition to the means above mentioned, and is an important aid to the road.

The cost of the road when completed to Epping, and ready for operation will not exceed \$316,104 21, or the sum of \$18,063 10 per mile—being less than the estimate of the engineer.—*Portsmouth Journal.*

**To California Gold Diggers.**

As the passion for gold is almost insatiable, and as California with all its abundance may fail to satisfy the appetites of those who go there to dig for it, we have taken pains to complete the outfit of the gold seeker, by procuring for him, from very ancient works on the transmutation of metals, some recipes for converting base substances into pure gold. With these guides he may devote to this process the rainy and winter seasons, when he cannot profitably work at the mines, and may in the end reap as much substantial advantage from it as the business of mining. From our neglect in not giving these recipes sooner, we fear that our merchants who equip the California gold diggers, may not have procured all the materials necessary for this operation, for those who leave in the next steamer; but from their known energy and activity, we have no doubt of their being able to furnish a full supply for those who leave in the subsequent steamer.

In a pamphlet entitled *The True Art of Alchemy*, published in 1524, is the following universal recipe:

"The first work is to unite the four elements by water, taken out of the beams of the sun and moon: then separate the arsenical sulphur and earthy forces—with this, and the common moisture of metals, you come to the philosopher's water, or sophical fountain, wherein is contained the first principles of Sol, Lune and Mercury; that is, sulphur, salt and mercury; then come to amalgamation, which is the same as calcination or purification; the virgin principles are then separated, the thin from the thick, and the air is converted to a watery nature, and the

watery to an earthy nature; and it is now endowed by such virtues that it will be made into a fire-abiding tincture, which, as it is excited and fermented, will transmute the imperfect metals." In the same work, it is stated that sophic mercury can be transmuted either to gold or silver; this process is excessively easy, and within the reach of every one, it is as follows: "Take common mercury, distil it four times from salt of tar and quicklime, then this mercury becomes cold to the touch and is sophic; take then four parts of this mercury, and dissolve one part of gold or silver leaf in it; then stir it up and it will become heated and the mercury transmuted to gold or silver, as the case may be." Van Helmont, who was a believer in the philosopher's stone, states that, "with red stone, he saw nine ounces of quicksilver transmuted by the addition of half a grain of gold." Sir Kenelm Digby affirmed that he made one of his transmutations according to the following recipe:—"Take good mineral antimony, mortify it with radicated vinegar, then separate its quintessence with pure spirits of wine; with this quintessence dissolve mercury duplication of antimony, which unite with a subtle calx of stone, and bring them to an incombustible oil, which will transmute mercury into gold."

#### Georgia.

The following is but one of the many instances we meet with in the Georgia papers, of the progress she is making in manufactures. In Georgia, there is more freedom of opinion and action than in almost any other southern state. Fortunately, she has not felt it to be her mission, as have her sister states of South Carolina and Virginia, to vindicate her past history, by refusing for the future all guides that the past does not furnish. Neither does she believe, as do her sisters, that her fathers reached the state of ultimate political and physical perfection, and that her only safety and her great mission consists, in maintaining inviolate the order of things they established. She is not disposed to pay the price of poverty to be consistent. On the other hand she welcomes into her service all the new agents, and contrivances that men are making use of to develop their resources to meliorate their condition and adapt the products of nature to the supply of their wants, though this course should impeach her past conduct, and mortify her vanity, by showing the falseness of her former condition. Mankind always array themselves under two classes, one of which believes that the past contains all the good, the other, the future. The Georgians evidently belong to this latter class, and are willing to adopt for their faith the revelation the future shall make.—They believe that the golden age never has been, but is to be, realised. We are happy to chronicle her progress in the arts, in which she will reap a rich reward, and set an example which will speedily be followed by her sister states.

#### From the Savannah Republican.

*Augusta the Southern Lowell.*—If we mistake not, the city of Augusta will in a few years deserve the above appellation, unless indeed Columbus, where we understand three new cotton factories are about going up, disputes the palm of superiority. Standing where we do now, and looking into the future, it is not easy to see any assignable limit to the prosperity of either place.

According to a late article in the Chronicle and Sentinel, Augusta has at a bound placed herself, through her manufacturing enterprise, immensely in advance of her position a few years since. That city for many years past has been able to boast of a class of merchants, whose general intelligence, far reaching sagacity, ability and determination to meet all their obligations, are not surpassed, we will venture to say, by any others in this Union. Her banking institutions, her manufactories and railroads, are well and profitably administered, and generally, everything prospers, even under the most distressing circumstances, through the resolute and judicious enterprise of her citizens. Within the few

years past, too, a race of mechanics has grown up there destined to work an immense deal of good, not only in Augusta, but incidentally and directly in every other part of the state. Success to the enterprise of the citizens of Augusta, say we, in all sincerity, and the sooner we are united with her by railroad, the better it will be for all parties.

These remarks have been suggested by an article in the Chronicle and Sentinel, which states that the Augusta Manufacturing Co. are preparing their \$40,000 worth of additional machinery to fill their extensive mill, while the stock for erecting a new one, capable of turning out 50,000 yards of cloth a week, is rapidly taken up.

Mr. Wm. Eve is pushing forward the excavation of the second level of the canal with a degree of energy no less characteristic than commendable. So soon as this and the outlet on the third level is completed, a third large cotton factory will be put in operation by some of the wealthiest planters in the county of Richmond. Mr. Coleman has already put in motion a part of the machinery in planing, turning and variety works. His splendid granite merchant mill makes steady and most substantial progress. The flouring mill of Mr. Cunningham is farther advanced.

In addition to these improvements, the same paper gives quite a long list of buildings moved, new fire proof warehouses in process of erection, cabinet ware factories, steam bucket factory, etc. The way in which that thing called *capital* will now accumulate in Augusta, will astonish some thinkers among us—we suspect.

#### Wonders in Locomotion--New Motive-Power.

We have been favored with the following description of a new discovery, for the propulsion of carriages, on rails and common roads, without engines, steam, air, magnetism, or animal power; and the propelling of ships, without either of the above means, or sails, paddles, or any propellers whatever:—

Sir.—I beg to inform you and your readers, that the patent has for its object a new motive-power, which, for advantages, surpasses by far steam, or any other power actually known; for, if we employ one cubic inch of the patented ingredient, we obtain from it no less a pressure than that of *forty-six tons* upon the square inch of surface. The gases evolved consist chiefly of carbonic oxide and carbonic acid gas, both gases permanently elastic, so that passing through cold air or water, they do not collapse, but will follow up the piston to the utmost limit of its work. In using this ingredient we require neither fire or water; it creates neither smoke nor any offensive effluvia, and, with the exception of a slight moisture, or pure vapor, it leaves no residuum behind. Neither is there any compound in the gases which could corrode metals, as was presumed by Tscheimacher, Porrett, Fordos, and Gelis, who seem to have copied from each other the supposition, "that there might be compounds of cyanogen in the gases of this ingredient, JUDGING FROM THE BLUE COLOR OF THE FLAME WHEN SUCH GASES WERE IGNITED," never telling us that the greatest portion was *carbonic oxide*, which gas is well known to burn with a dark blue flame, very similar to that of ignited *cyanogen*; while *cyanogen* is known by its offensive and very peculiar smell, which is not to be traced in the gases of the ingredient in question, which consists, in fact, of all kinds of vegetable fibres, or lignine, such as cotton, flax, hemp, tow, saw dust, straw, hay, rags, paper, &c., rendered explosive by their being dipped for 11 or 15 minutes in nitric acid, strengthened by an admixture of an equal quantity of sulphuric acid, then well washed in pure water, and dried for about two hours. By this simple process all the vegetable fibres in the creation become highly explosive. This fact was first noticed by Professor Otto, of Brunswick, about fourteen years ago; and again by Pelonze, of Paris, in 1838; and finally fully published in the English press about the early part of the year 1845, under the name of *gun-cotton* as it was called by Professor Schonbein, or as M. Pelonze called it, *xyloidine*.

Now, considering the very intense power of *xyloidine*, it is found, on examination, to be the most tractable ingredient we know—for example, compression, or matting, suffices to limit, retard, or entirely prevent its explosion—not like gunpowder, by

one fired grain of which a whole mass of the same powder is instantaneously ignited and exploded; no by slighter or greater degree of compression, I have caused a long sliver of *xyloidine* to explode in my hand in six and seven degrees of velocity and force; or, by compressing a certain part of the sliver between my fingers, I have limited its explosion to the mere loose and carded parts of it. On one occasion, I put successively small pellets of *xyloidine* on a table, and compressed each of those pellets in the middle with the back of a knife or finger. I then took a match and exploded the projecting ends of such pellets; this done, I lifted up the knife or finger, are found the middle parts of the pellets, as far as they had undergone the pressure, *unexploded*, and as sound as ever, though just as capable of exploding in a free and unconfined state as the other parts have been. By dint of these properties, therefore, *xyloidine* becomes so tractable, that its great energies may be completely managed, and its explosive powers may be either limited at discretion, or directed to that spot alone where its motive efficacy is required. These properties indicate to us also an easy mode of preventing accidents; but as the conversion of vegetable fibres into *xyloidine* is so very simple, and takes up so little time, only *small quantities*, as wanted, need be constantly making; and if those small quantities of *xyloidine*, together with those which are actually supplying the working machinery, be inclosed in tight vessels, and kept out of the reach of fire, I cannot see how any accidental explosion could occur; for we never hear, for example, of any explosions of gunpowder taking place in soldiers' cartridge boxes, or in the chests of the artillery, or in the store cabins of the men-of-war and other vessels, which are constantly carrying and using large quantities of that explosive powder, which is more easily scattered in the way of fire than *xyloidine*. Very different, however, are the facts connected with steam-boilers, and the reasons are obvious; for, where there is an immense volume of steam kept up to the highest possible pressure, that steam is constantly seeking for *vent*, and in that effort it has only too often found its exit by the bursting of the boiler which had imprisoned its gigantic force; and thus it is that—the most lamentable destruction of human life has occurred. Now, as in the machinery proposed to be worked by *xyloidine*, there is *no boiler*—there is *nothing* to burst; and provided the cylinders of the engine itself be moderately strong, which is generally the case, it is evident that there can arise no danger whatever from *xyloidine* being employed as motive power.

The plans which may be adopted for the working of *xyloidine* as motive power are endless in their diversity. One plan, that of inserting a continuous sliver of *xyloidine* into the chamber of a common steam engine, and exploding it by means of electricity under the piston alternately, is now worked by Mr. Isaac Mickle, of Camden, New Jersey, in America.\* For an engine of two-horse power, a thread not larger in size than ladies' sewing cotton is quite sufficient. The working machinery, therefore, need not be larger than a man's hat, and hence the enormous economy of the material, and consequent cheapness of the motive power obtained from it; while during a suspension of work there is no consumption whatever—to this vast economy the great saving of space and metal, and the reduction of weight in locomotive carriages for common roads, which, on account of the great weight of the steam apparatus, (no less than  $\frac{1}{4}$  ton to *one ton* for every horse power) has been found hitherto impracticable, while the small and compact *xyloidine* engines are easily attached to carriages, street cabs, tradesmen's carts, farmer's wagons, dandy's velocipedes, or the old ladies' Bath chairs. Add to this the incalculable value of this power to the trans-Atlantic navigation, or, indeed, in vessels generally propelled by machinery, where room is a great object, and where fire and smoke are objectionable, as also in manufactures similarly circumstanced—add, I say, all these items, and the patent herein described proves at once to be the most valuable of our age, and, had such a discovery been made about 12 or 14 years ago, it might have proved a real blessing to this country; for, with this beautiful motive power in our possession, railroads would have been useless, for

\* See the *Nonconformist* or the *Manchester Examiner*, March 6, 1847.

locomotives on the common roads would have been universally used, and that ruinous outlay on the building of railroads, which has so completely drained England of its capital, would have been prevented, and the money would have been employed in reproductive commerce with foreign countries—so that the panic which is now paralysing every branch of trade, and which is driving Great Britain to the very verge of bankruptcy and starvation, would have been unknown, and in its stead an universal and uninterrupted prosperity would have been the result.

Since writing the above, I have been engaged in constructing an engine and locomotive, to be worked on the common roads by xyloidine, on the following plan:—Small quantities of xyloidine are exploded successively into a copper recipient of a spheroidal form of 13 inches diameter, and  $\frac{1}{2}$  inch strong in metal. Each separate explosion is adequate to produce, by means of double cylinders, a complete revolution of the crank. The object of the copper recipient is merely to allow the intense gases thrown into it room enough to expand, and thus to change their percussive intensity into a more gentle dynamic power, without in any way losing any of the quantity of that power. I can, therefore, let out from that copper recipient as much of the gases; through a stop-cock, as would produce a pressure of from 30 to 60, or 120 lbs. upon the square inch of the piston; moreover by the very heat accumulated in the metal of the recipient, the gases are kept up to their original strength, so that, the longer the engine continues to work, the greater the comparative economy of xyloidine, on account of the heat of the recipient of the machinery, which serve to keep up great expansion, and consequently great power in the gases.

My experiments with a steam engine of about 2½ horse power, on the above principle, answered admirably; but while these experiments were going on I made a further discovery, and this last one is verging almost on a miracle. The most prominent features of my last discovery are—that the propulsion of carriages on railroads, and on common roads, will be now effected without engines, steam, fire, water, magnetism, air, or animal power, and propelling of ships without either of the above means, sails, or paddles, or any propellers whatever.—I beg to remain, Sir, &c.,

ADOLPH COUNT DE WERDINSKY.  
London, April 13. [Lond. Min. Jour.]

#### AMERICAN RAILROAD JOURNAL.

Saturday, May 19, 1849.

##### Railway Share List.

Our share list, in another column, is the result of no small amount of labor;—still it is quite incomplete in its details—though we believe it embraces every railroad in operation in the United States.—We respectfully request the officers of every railroad company, who has charge of its concerns, to examine it, and supply us with the means to make it perfect. We particularly request each company, that has not done it already, to send us the last annual report of their Directors, with a list of the officers of the company, its different stations, fares, and running time, the names of conductors employed on each road, and such other information as may be thought advisable, in addition to supplying the facts to complete our list. As soon as we can procure these returns, we shall issue our paper in a form which shall be still more useful to the public and the railway companies. Our Journal reaches every railway company in this country, though in several instances it goes to other officers than the President. Will not the persons intrusted in the procurement of information connected with each road in the country see to it that their own road is not overlooked.

##### Culture and Manufacture of Cotton.

After the article on the Culture and Manufacture of Cotton in our last paper was in type, we conclu-

ded an arrangement with Gen. James for a connection with this paper. The position occupied by Gen. James, leads us to withhold further comments upon his recent work, though we intend to follow up the subject, giving full details and statistics of the production and manufacture of cotton.

#### TO THE PATRONS OF THE "AMERICAN RAILROAD JOURNAL."

With the desire to aid, as far as his ability and opportunity will permit, the great cause to which the "AMERICAN RAILROAD JOURNAL" is devoted, the subscriber has become associated with its Editorial department, and is to be a regular contributor to its columns; and, in that capacity, would ask leave to introduce himself to its patrons and the public.

For nearly a quarter of a century, the subscriber has been a practical mechanic and manufacturer; and, during that period, it has been his constant aim to store his mind with all that is useful and important in the departments in which he has been engaged, to acquire a competent *practical* as well as theoretical knowledge of mechanical science, and to make a proper application of its principles. To the subject of the manufacture of cotton, with the principles and details of which, the subscriber professes to be thoroughly conversant, it is his purpose to pay particular attention. In doing so, he flatters himself that he will be able to furnish much matter of interest to the general reader, and valuable to the manufacturer. To the general mechanical sciences he will also give attention, and from this broad field will endeavor, from time to time, to present to the readers of this paper such facts, principles, combinations, results, etc., as may be deemed most useful. Being extensively acquainted on most of the principal stage, steamboat and railroad routes in the United States, his facilities for information respecting them, are neither few nor small. On this subject, therefore, he will bestow attention, and offer such remarks as circumstances may dictate, or the public good seem to demand.

Fully aware of the responsibility he assumes, though but a subordinate in the editorial department, the subscriber hopes to make himself useful to its readers, by calling to his aid the fruits of his experience, and his knowledge of the subjects on which he proposes to write. Truly American, in every sense of the word; by birth, by education, by feeling, and in principle—from habit and from sympathy, as a practical mechanic and working man, affiliated with the industrial body of the American people—the subscriber entertains a deep solicitude for the promotion of American enterprise, the protection and reward of American industry, the advancement of mechanical science; in short, for all that can add to the welfare and happiness of the American people, the honor, the interest, and the true greatness of our common country. To these great objects he will devote his best endeavors, and engages to give to them all the support that industry and his ability can command.

CHAS. T. JAMES.

Providence, R. I., May 15, 1849.

##### Mechanical Science—The Steam Engine.

(No. 1.)

Astronomy, chemistry and some other branches of science, seem by common consent, and especially by the learned, to have been placed above that of mechanics. Why this should have been the case, seems difficult to imagine, unless it were because mechanics and manual labor were associated together. If any distinction should be made, it should be in favor of mechanics; for, without an acquain-

tance with them, and without their aid, no other field of science can, by any possible means, be explored, or its principles be accurately defined.—Mechanical science has done more for the benefit of the human race, than all other branches of science combined. It has done more for human comfort and human civilization, and stands foremost in all that is useful, elegant or ornamental. Mechanical science, if we may reckon from its important and mighty results, is worthy the highest energies and aspirations of the genius of man.

What invention or discovery, ancient or modern, can equal that of the steam engine? What prodigious changes have already been wrought by it! What wonderful results it is yet to accomplish in ameliorating the condition of the human race! And what gave birth to this wonder-working prodigy? It is emphatically, in all its stages, in all its parts, in all its details, in all its operations, and in all its improvements, the joint offspring of mechanical science and human genius. For ages, the astronomer might have swept the heavens with his gigantic telescope—to the end of time, the chemist might have bent over his crucible, and mingled, and decomposed his multifarious ingredients—the geologist might have penetrated to the earth's core, and the mathematician have strung out his *plus* and *minus*, equivalents, roots and tables, till he had carpeted the globe with them—and yet, the steam engine, the greatest and the noblest of all inventions and discoveries, would, despite of all the scientific lore, have remained unknown as long as the world shall stand, unknown.

This great product of mechanical science was the work of mechanical genius, unaided almost entirely by the speculative technical science of the schoolmen. In its rudest form, in fact, it astonished the so-called scientific world. During its progress even up to the present moment, a vast proportion of all the useful improvements made on it, have been the work of practical mechanics—self-made men, who have become embued with the principles of mechanical science, by means of study in their workshops, with the implements of their industrial calling in their hands. Even a Silliman, a Hare, a Davy, and a Lardner, mighty in scientific knowledge, have done little more than examine the inventions and discoveries of the self-made scientific mechanic, as relates to the steam engine, and to explore their principles and operations.

Mechanical science is better and more extensively understood than any other. The reason is that it enters into all industrial operations, and is always throwing out hints and suggestions, of which the mechanic is ever ready to take the advantage. The difference between the mechanic of the *school* and the mechanic of the workshop is this—The former speculates on mechanical principles, forces, powers, &c., but makes no advance in discovery, and knows nothing of the practice. His knowledge is the *ipse dixit* of books and lectures. The practical mechanic makes deductions from one operation which give the clue to further discoveries. His first essay is at invention. He deduces mechanical laws from the constructions of his own hands. In their actual results he cannot be mistaken. Thus he enters the field of mechanical science, and thus he progresses, till at length, without the least smattering of technology, he becomes qualified to instruct the most learned professor of the school. It is thus that the steam engine has become what it is. It is thus that improvements will go on. It is thus that mechanical science has won its most important triumphs, and done more than all other sciences to

promote the welfare of the human race. Practically, it has been but little fostered by the scholastic world; but as it daily increases in honor, as well as importance, the time must soon arrive, when it will assume its legitimate position in the arts.

C. T. J.

**Mr. Hudson and the Eastern Counties Railway.**

Our readers will recollect an account of the semi-annual meeting of the Eastern Counties railway, a few weeks ago, when Mr. Hudson was so violently assailed for certain transactions in making sales of shares. The *Bankers' Magazine* of a more recent date says:—The result of the investigation then ordered, has shown Mr. Hudson's conduct to have been in the highest degree reprehensible, and that the effect has been to seriously depress railway securities in the market.

*Wilmer & Smith's European Times* says:—The report of the committee has disclosed the most flagitious delinquencies and machinations perpetrated by Mr. Hudson and Mr. Waddington, and that both these gentlemen must retire from Parliament on account of them. A new law is proposed in Parliament so as to prevent a recurrence of similar frauds.

Possibly some people in this country may have known the facts in regard to Hudson's management with the stock of the *Great Western Railway of Canada*, by which the prospects of that road have been seriously impaired. Those who took an interest in that matter will feel no surprise at these recent disclosures in England.

We are happy to acknowledge the receipt of a copy of the Constitution of the South Carolina *Institute for the Promotion of Art, Mechanical Ingenuity and Industry*, with their very interesting address appended to the same, which we shall endeavor to present to our readers in our next number.

**Death of Col. George W. Whistler.**

Few men have lived in our day who have acquired a more enviable position and reputation than **COL. GEORGE W. WHISTLER**, whose death in Russia has recently been made known in this country.

The tendency of our institutions and the spirit of our people has led us to attach an under importance to political honors, and to regard the highest attainments in the professions as less worthy objects of ambition than political success and political renown.

We are happy to believe that this feeling is gradually passing away. However attractive political distinction may be to the ardent young men of our day, it is found to confer far less real honor, and bring fewer rewards than the attainments of professional eminence. Every day, too, the merely learned professions are losing their importance in public estimation in comparison with the permanent hold which the useful professions devoted to scientific inquiry or mechanical industry have attained. The career of Col. Whistler is an illustration of this remark.—He was admitted to the confidence of the Emperor of Russia, and held a social position equal to that attained in any ordinary walk of life.

The following brief notice of Col. Whistler from the *Baltimore American*, in the concise and expressive language, for which its pages are conspicuous, gives us, in few words, a just tribute to his memory:

It is our painful duty to record, under the obituary head, the death of Col. George W. Whistler, Chief Engineer of the Pittsburgh and Moscow railroad, and for many years a past resident of St. Petersburg. Few persons have done more to illustrate the

American character for talent, skill and integrity, in a foreign land, than Col. Whistler; and from all that we have learned, from very many sources, it has been the lot of few, dying among strangers, and away from their homes, to leave behind them so many sorrowing friends.

Col. Whistler was a graduate of West Point, and was one of those who left the army, when the internal improvement system of our country began to be developed, to devote themselves to Civil Engineering. For a while he was in the service of the Baltimore and Ohio Railroad Company, soon after its organization, and was engaged also, for a season, on the Susquehanna railroad. Subsequently he removed to the eastward, and after very active duty in various companies, became the Chief Engineer on the Western Railroad, between Boston and Albany. He had just completed this great work, when the Emperor of Russia sent a commission to the United States, with a view of obtaining here a suitable person to construct the railroad between St. Petersburg and Moscow. Col. Whistler was selected and having accepted the appointment, left this country, never to return. This was in 1842: since which he has been constantly engaged in the duties of his station; and had his life been spared for one year more, he would have seen the completion of the road which he had located and urged forward with so much energy and skill. In addition to his post of Chief Engineer of the road in question, he had lately been appointed to plan and construct extensive National dock yards at St. Petersburg, which might have still detained him for many years abroad. An appointment which was, in itself, the best proof that could be given of the high standing which he had obtained in Russia.

But it has pleased the Almighty to cut him off in the prime of life, and in the midst of a career of eminent usefulness. That an American should have been selected for the post that he filled, was a tribute to his country, which made his success a matter of public interest at home; and the concurrent testimony of all who knew him, from boyhood to manhood, at home and abroad, testifies to a character in which the highest professional attainments were united with the most estimable qualities of private life—a character which made his admirers his friends, and which, in a position where envy might have made him its mark, saved him from all unkind attacks, and surrounded him with those who served, because they loved him.

**India-rubber for Railroad Cos.**

**RUBBER SPRINGS—Bearing and Buffer—Fulfer's Patent—Hose** from 1 to 12 inches diameter. Suction Hose. Steam Packing—from 1-16 to 2 in. thick. **Rubber and Gutta Percha Bands**. These articles are all warranted to give satisfaction, made under Tyger & Helms' patent, issued January, 1849.—No lead used in the composition. Will stand much higher heat than that called "Goodyear's," and is in all respects better than any in use. Proprietors of railroads do not be overcharged by pretenders.

HORACE H. DAY,  
Warehouse 23 Courtlandt street.  
New York, May 19, 1849.

**Rolling Mills for Sale.**

**THE MASSACHUSETTS IRON COMPANY** offer for sale their two Mills, situated on Boston Harbor, at South Boston. Each Mill is 214 ft. by 174, including sheds. The two contain 15 double Puddling furnaces, and 9 Heating Furnaces.—There are two trains of Rolls in each Mill, altogether capable of manufacturing 1000 tons of rails per month. They are well located for the receipt and delivery of iron from vessels, with every convenience usually attached to such an establishment.

There is connected with, and will be sold at the same time, about 400,000 feet of upland, on which are erected, besides the mills, 4 blocks, containing each 4 brick dwelling houses for workmen: a wooden counting room with dwelling adjoining, a horse stable, and a coal shed 210 feet long by 70 feet wide now containing 2967 cahndrons Pictou coal and 933 tons of pig iron.

The terms of sale will be made liberal. For further information, apply to B. T. REED, Treasurer, Suffolk Buildings.

May 17, 1849.

**Large Pumps.**

THE Boston Water Commissioners offer for sale a large number and variety of Wooden Square Pumps, used in clearing excavations from water during the construction of the Aqueducts.

Also Two Large Screw Pumps, each 25 feet long and 24 feet in diameter.

For further particulars, enquire at the office of the Water Commissioners, 119 Washington St., Boston, or of E. S. Chesborough, West Newton.

May 19, 1849.

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**Railroad Instruments.**

**THEODOLITES, TRANSIT COMPASSES, and Levels, with Fraunhofer's Munich Glasses, Surveyor's Compasses, Chains, Drawing Instruments, Barometers, etc., all of the best quality and workmanship, for sale at unusually low prices, by**

**E. & G. W. BLUNT,**

**No. 179 Water St., cor. Burling Slip.**

**New York, May 19, 1849.**

**To Railroad Companies and Contractors.**

**FOR SALE.—Two Locomotive Engines and Tenders**, at present in use on the Beaver Meadow Railroad, being too light for their coal trains, but well calculated for either gravel or light passenger trains.

They weigh, in running order, about 8 tons each—having one pair of driving wheels 4 feet diameter, 4 truck wheels 30 inches diameter, with cylinders 10 in. diameter, and 18 inches stroke of piston. Tenders on 4 wheels. Address **JAMES ROWLAND,**

**Prest, Beaver Meadow Railroad & Coal Co., Philadelphia.**

**or, L. CHAMBERLAIN, Secy., at Beaver Meadow, Pa.**

May 19, 1849. 20tf

**To Railroad Companies.**

**—WROUGHT IRON WHEELS—SAFETY AND ECONOMY.**

**NORRIS' LOCOMOTIVE WORKS, SCHENECTADY, NEW YORK,** Are Manufacturing Wrought Iron Driving, Truck, Tender, and Car Wheels—made from the best American Iron. Address **E. S. NORRIS.**

May 16, 1849.

**Railroad Iron.**

**100 Tons 2 1/4 x 1, 30 Tons Railroad.**

All fit to re-lay. For sale cheap by **PETTEE & MANN,**  
228 South St., New York.

May 16, 1849.

**American Railroad Journal.**

**Steam Navigation, Commerce, Mining, Manufactures.**

**ESTABLISHED IN 1831.**  
**At Five Dollars Per Annum in Advance.**

**THE AMERICAN RAILROAD JOURNAL** is published at 54 Wall St., New York, under charge of **HENRY V. POON, Esq., Editor.** Several gentlemen are engaged as regular contributors, known as leading Railroad men in the country.

The Railroad Journal was commenced before any similar publication was attempted in this country, or elsewhere, devoted to the Railway interest; and it has recorded the progress of the Railway System from its humble beginnings, and contributed to carry it forward till the whole civilized world has become more dependent upon it than upon any other agency whatever.

The Locomotive Railway System has now become the great necessity of man—the great instrument of civilization and progress—the great idea of modern times. It has already done more to relieve the burdens of labor—to minister to man's wants and necessities, and to elevate him in the scale of being, than any other agency that has ever been exerted.

The Locomotive Steam Engine, we regard as the greatest achievement of man—the most extraordinary instrument for good the world has yet reached. It traverses the earth with a speed outstripping the swiftest bird upon the wing, carrying—not thought or language alone, but—man, living, breathing, sensitive man—instinct with new life—new energy—new powers, conscious almost of new faculties and a new creation. Without danger, and without fatigue, it enables man to transfer himself to distant regions of space, and participate in the enjoyments, the physical gratifications, and the various pleasures of social existence,

In a manner heretofore unknown. It gives to every community the productions, and ideas of every other—disclosing or creating new sources of enjoyment, and multiplying, to an infinite degree, every susceptibility to pleasurable emotion.

It will not have achieved its highest work till it has harmonised political differences, and elevated all men to the highest social condition of which they are capable. By making distant places one neighborhood, it practically prolongs our being, not to one, but to a fourfold degree, enhancing, in the same ratio, all the joys of existence.

Whoever, therefore, labors in this field, has more than the ordinary rewards for exertion. He is working for humanity—for progress—for the highest good of his race. Profoundly impressed with these views, we intend, in accordance with their spirit to conduct the Journal.

The history, the influence, and the improvements of the railway, with statistics, showing its extent, cost and productiveness, as well as a careful inquiry into its management; scientific discoveries, the mechanic arts, steam navigation, commerce and mining—especially in connection with locomotion and the progress of industry—are embraced in the range of our labors.

Under the mining head, the readers of the Journal will find a series of articles on the *Iron Ores and Iron Manufacture* of the United States, from the pen of J. T. HODGE, Esq., who is an Assistant Editor of the Journal, for the department of Mining and Metallurgy.

Mr. Hodge has for many years been engaged in the preparation of a work on the Iron Ores and Iron Manufactures of the United States, embracing descriptions in detail of the different localities of ore, the expense of working different mines, the structure and location of the several blast furnaces and the results of their working. This work is to be published in a condensed form in the Journal, in a series of weekly papers, conveniently arranged under appropriate heads, with statistical tables of different districts, and such plans and drawings as may be found desirable.

Besides this work on iron, Mr. Hodge is to furnish to the Journal detailed accounts of the *Copper and Lead Mines of the United States*, which have been carefully examined by him, with information on mining subjects generally.

These works will be found indispensable to all parties engaged in mining and the iron manufacture. This is the first attempt yet made to give, in an elaborate and practical form, scientific work on the iron ores, the iron manufacture, and mining resources of the whole country.

GEN. C. T. JAMES, of Providence, has also been engaged as an Assistant Editor of the Journal. He will furnish to the Journal full accounts of the progress of mechanical invention, and of the condition of the manufacturing interests of the country. His reputation as a practical mechanic, a successful manufacturer and an able writer, are already well known to the public. He will also furnish valuable information touching other branches of industry and of business.

Great Britain owes her present commercial and political importance more to the mechanical invention of her people than to any other cause.

American skill, industry and enterprise, are giving us a distinguished rank in the community of nations. To these interests, and to the Railway, as the most valuable of all, this Journal will be earnestly devoted.

J. H. SCHULTZ & CO.

### ENGINEERS.

**Arrowsmith, A. T.,**  
Buckfield Branch Railroad, Buckfield, Me.

**Berrien, John M.,**  
Michigan Central Railroad, Marshall, Mich.

**Clement, Wm. H.,**  
Little Miami Railroad, Cincinnati, Ohio.

**Fisk, Charles B.,**  
Cumberland and Ohio Canal, Washington, D. C.

**Felton, S. M.,**  
Fitchburg Railroad, Boston, Mass.

**Ford, James K.,**  
New York.

**Gzowski, Mr.,**  
St. Lawrence & Atlantic Railroad, Montreal, Canada.

**Gilbert, Wm. B.,**  
Rutland and Burlington Railroad, Rutland, Vt.

**Grant, James H.,**  
Nashville and Chattanooga R. R., Nashville, Tenn.

**Harry, P.,**  
Binghamton, New York.

**Holcomb, F. P.,**  
Southwestern Railroad, Macon, Ga.

**Higgins, B.,**  
Mansfield and Sandusky Railroad, Sandusky City, O.

**Johnson, Edwin F.,**  
New York and Boston Railroad, Middletown Ct.

**Latrobe, B. H.,**  
Baltimore and Ohio Railroad, Baltimore, Md.

**Morton, A. C.,**  
Atlantic and St. Lawrence Railroad, Portland, Me.

**McRae, John,**  
South Carolina Railroad, Charleston, S. C.

**Nott, Samuel,**  
Lawrence and Manchester Railroad, Boston,

**Reynolds, L. O.,**  
Central Railroad, Savannah, Ga.

**Roberts, Solomon W.,**  
Ohio and Pennsylvania Railroad, Pittsburgh, Pa.

**Robinson, James P.,**  
Androscoggin & Kennebec Railroad, Waterville, Me.

**Schlatter, Charles L.,**  
Northern Railroad (Ogdensburg), Malone, N. Y.

**Stark, George.,**  
Bost., Con. and Mont. R. R., Meredith Bridge, N. H.

**Trimble, Isaac R.,**  
Philad., Wil. & Baltimore Railroad, Wilmington, Del.

**Tinkham, A. W.,**  
. United States Fort, Bucksport, Me.

**Thomson, J. Edgar.,**  
Pennsylvania (Central) Railroad, Philadelphia.

**Whipple, S.,**  
Civil Engineer and Bridge Builder, Utica, N. Y.

**Williams, E. P.,**  
Auburn and Schenectady Railroad, Auburn, N. Y.

**Williams, Charles H.,**  
Milwaukee, Wisconsin.

### BUSINESS CARDS.

**James Laurie, Civil Engineer,**  
No. 23 RAILROAD EXCHANGE, BOSTON, MASS.  
Railroad Routes explored and surveyed. Estimates, Plans and Specifications furnished for Dams, Bridges, Wharves, and all Engineering Structures.  
October 14, 1848. 6m\*

**James Herron, Civil Engineer,**  
OF THE UNITED STATES NAVY YARD,  
PENSACOLA, FLORIDA.,  
PATENTEE OF THE  
HERRON RAILWAY TRACK.  
Models of this Track, on the most improved plans, may be seen at the Engineer's office of the New York and Erie Railroad.

### IRON.

#### Pig and Bloom Iron.

THE Subscribers are Agents for the sale of numerous brands of Charcoal and Anthracite Pig Iron, suitable for Machinery, Railroad Wheels, Chains, Hollowware, etc. Also several brands of the best Puddling Iron, Juniata Blooms suitable for Wire, Boiler Plate, Axe Iron, Shovels, etc. The attention of those engaged in the manufacture of Iron is solicited by

A. WRIGHT & NEPHEW,  
Vine Street Wharf, Philadelphia.

#### Railroad Iron.

RAILROAD IRON & LOCOMOTIVE TIRES imported to order, and constantly on hand, by A. & G. RALSTON,  
4 South Front St., Philadelphia.

#### Railroad Iron.

THE UNDERSIGNED ARE PREPARED TO contract for the delivery of English Railroad Iron of favorite brands, during the Spring. They also receive orders for the importation of Pig, Bar, Sheet, etc. Iron.

THOMAS B. SANDS & CO.,

22 South William street,

New York.

February 3, 1849.

22 South William street,

New York.

2m.11

English Railroad Iron.  
3000 Tons T pattern Rails in store, and to arrive this Spring—58 and 60 lbs per yard; of an approved pattern, best English make, each bar being stamped with the manufacturers' name, and inspected before shipment at the works in Wales. For sale by DAVIS, BROOKS & CO.,  
68 Broad street.

March 18, 1849.

2m.11

#### Railroad Iron.

THE MOUNT SAVAGE IRON WORKS, ALLEGHENY COUNTY, MARYLAND, having recently passed into the hands of new proprietors, are now prepared, with increased facilities, to execute orders for any of the various patterns of Railroad Iron. Communications addressed to either of the subscribers will have prompt attention. J. F. WINSLOW, President

Troy, N. Y.

ERASTUS CORNING, Albany.  
WARREN DELANO, Jr., N. Y.  
JOHN M. FORBES, Boston.  
ENOCH PRATT, Baltimore, Md.

November 6, 1848.

#### Railroad Iron, Pig Iron, &c.

600 Tons of T Rail 60 lbs. per yard.

25 Tons of 24 by 2 Flat Bars.

25 Tons of 24 by 9-16 Flat Bars.

100 Tons No. 1 Gartsherrie.

100 Tons Welsh Forge Pigs.

For Sale by A. & G. RALSTON & CO.  
No. 4 So. Front St., Philadelphia.

#### Railroad Iron.

THE SUBSCRIBERS ARE PREPARED TO take orders for Railroad Iron to be made at their Phoenix Iron Works, situated on the Schuylkill River, near this city, and at their Safe Harbor Iron Works, situated in Lancaster County, on the Susquehanna river; which two establishments are now turning out upwards of 1800 tons of finished rails per month.

Companies desirous of contracting will be promptly supplied with rails of any required pattern, and of the very best quality.

REEVES, BUCK & CO.,  
45 North Water St., Philadelphia.

March 15, 1849.

#### Railroad Iron.

THE Undersigned offer for sale 3000 Tons Railroad Iron at a fixed price, to be made of any required ordinary section, and of approved stamp.

They are generally prepared to contract for the delivery of Railroad Iron, Pig, Bar and Sheet Iron—or to take orders for the same—all of favorite brands, and on the usual terms.

ILLIUS & MAKIN.

41 Broad street.

March 29, 1849.

3m.13

#### Railroad Iron.

THE NEW JERSEY IRON CO'S WORKS AT Boonton, are now in full operation, and can execute orders for Railroad Bars of any required pattern, equal in quality to any made in this country. Apply to DUDLEY B. FULLER, Agent,  
139 Greenwich street.

New York, October 25, 1848.

#### Railroad Iron.

THE TRENTON IRON COMPANY ARE NOW turning out one thousand tons of rails per month, at their works at Trenton, N. J. They are prepared to enter into contract to furnish rails of any pattern, and of the very best quality, made exclusively from the famous Andover iron. The position of the works on the Delaware river, the Delaware and Raritan canal, and the Camden and Amboy railroad, enables them to ship rails at all seasons of the year. Apply to COOPER & HEWITT, Agents.

17 Burling Slip, New York.

October 30, 1848.

#### Coal.

CUMBERLAND SEMI-BITUMINOUS COAL, superior quality for Locomotives, for sale by H. B. TEBBETTS,  
No. 54 Pine St., New York.

May 12, 1849.

1m19

**Direct Action Engines  
FOR STEAMBOATS.  
THE PATENT DOUBLE CYLINDERS,  
AND ALSO**

THE ANNULAR RING PISTON ENGINES,  
of Messrs. Maudslay, Sons & Field, of London, may  
be built in the United States, under license, which can  
be obtained of their agent,

THOMAS PROSSER, C. E.  
28 Platt street, New York.

May 6, 1848.

**WAP-WELDED WROUGHT IRON TUBES**  
for Tubular Boilers, from 1 $\frac{1}{2}$  to 15 inches diameter, and any length not exceeding 17 feet—manufactured by the Caledonian Tube Company, Glasgow, and for sale by

IRVING VAN WART,  
12 Platt street, New York.

JOB CUTLER, *Patentee.*

These Tubes are extensively used by the British Government, and by the principal Engineers and Steam Marine and Railway Companies in the Kingdom.

**DEAN, PACKARD & MILLS,  
MANUFACTURERS OF ALL KINDS OF**

**RAILROAD CARS,**

SUCH AS

PASSENGER, FREIGHT AND CRANK CARS,

— ALSO —

SNOW PLOUGHS AND ENGINE TENDERS  
OF VARIOUS KINDS.

CAR WHEELS and AXLES fitted and furnished at short notice; also, STEEL SPRINGS of various kinds; and

**SHAFTING FOR FACTORIES.**

The above may be had at order at our Car Factory,

REUEL DEAN,  
ELIJAH PACKARD,  
ISAAC MILLS,

SPRINGFIELD, MASS.  
1 $\frac{1}{2}$ 48

**Mattewan Machine Works.**

THE Mattewan Company have added to their Machine Works an extensive Locomotive Engine department, and are prepared to execute orders for Locomotive Engines of every size and pattern—also Tenders, Wheels, Axles, and other railroad machinery, to which they ask the attention of those who wish such articles, before they purchase elsewhere.

**STATIONARY ENGINES, BOILERS, ETC.** Of any required size or pattern, arranged for driving Cotton, Woolen, or other Mills, can be had on favorable terms, and at short notice.

**COTTON AND WOOLLEN MACHINERY.** Of every description, embodying all the modern improvements, second in quality to none in this or any other country, made to order.

**MILL GEARING.**

Of every description, may be had at short notice, as this company has probably the most extensive assortment of patterns in this line, in any section of the country, and are constantly adding to them.

**TOOLS.**

Turning Lathes, Slabbing, Planing, Cutting and Drilling Machines, of the most approved patterns, together with all other tools required in machine shops, may be had at the Mattewan Company's Shops, Fishkill Landing, or at 39 Pine street, New York.

WM. B. LEONARD, *Agent.*

**Devlan's Machinery Oil.**

THE Subscribers, Agents for P. S. Devlan & Co's "Patent Lubricating Oil"—price 80c. per gallon 4 mos. or 3 per cent off for cash.

We refer to the following certificate of Messrs. Norris Brothers, in whose works, any one by calling can see the oil in use and judge for themselves.

Norris' LOCOMOTIVE WORKS.  
Philadelphia, April 2, 1849.

We have been using throughout our Works, during the last six weeks, "Devlan's Lubricating Oil," and so far as we have been able to judge from its use, we think it preferable to the sperm oil generally used, for both heavy and light bearings. NORRIS, BROTHERS.

For sale by ALLEN & NEEDLES,  
22 & 23 South Wharves,  
Philadelphia Pa.

1 $\frac{1}{2}$ 48

**LAP—WELDED  
WROUGHT IRON TUBES  
FOR**

**TUBULAR BOILERS,  
FROM 1 1-2 TO 8 INCHES DIAMETER.**

These Tubes are of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER,  
Patentee.  
28 Platt street, New York.

**THE NEWCASTLE MANUFACTURING CO.** continue to furnish at the Works, situated in the town of Newcastle, Del., Locomotive and other steam engines, Jack Screws, Wrought Iron Work and Brass and Iron Castings, of all kinds connected with Steam-boats, Railroads, etc.; Mill Gearing of every description; Cast Wheels (chilled) of any pattern and size, with Axles fitted, also with wrought tires, Springs, Boxes and bolts for Cars; Driving and other wheels for Locomotives.

The works being on an extensive scale, all orders will be executed with promptness and despatch. Communications addressed to Mr. William H. Dobbs, Superintendent, will meet with immediate attention.

ANDREW C. GRAY,  
a45 President of the Newcastle Manuf. Co.

**TO RAILROAD COMPANIES AND MANUFACTURERS OF RAILROAD MACHINERY.** The subscribers have for sale American and English Bar Iron, of all sizes; English Blister, Cast, Shear and Spring Steel; Juniata Rods; Car Axles, made of double refined iron; Sheet and Boiler Iron, cut to pattern; Tires for Locomotive Engines, and other railroad carriage wheels, made from common and double refined B. O. Iron; the latter a very superior article. The Tires are made by Messrs. Baldwin and Whitney, Locomotive Engine Manufacturers of this city. Orders addressed to them, or to us, will be promptly executed.

When the exact diameter of the wheel is stated in the order, a fit to those wheels is guaranteed, saving to the purchaser the expense of turning them out inside.

THOMAS & EDMUND GEORGE,  
a45 N. E. cor. 12th and Market sts., Philad., Pa.

**NICOLL'S PATENT SAFETY SWITCH FOR RAILROAD TURNOUTS.** This invention for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design. It acts independently of the main track rails; being laid down or removed without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two castings and two rails; the latter, even if much worn or used, not objectionable.

Working models of the Safety Switch may be seen at Messrs. Davenport, Bridges & Kirk's Cambridge Port, Mass., and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained, on application to the Subscribers, Inventor and Patentee.

G. A. NICOLLS,

Reading, Pa.

**MACHINE WORKS OF ROGERS KETCHUM & GROSVENOR, Patterson, N. J.** The undersigned receive orders for the following articles manufactured by them of the most superior description in every particular. Their works being extensive, and the number of hands employed being large, they are enabled to execute both large and small orders with promptness and dispatch.

**Railroad Work.**—Locomotive Steam Engines and Tenders; Driving and other Locomotive Wheels, Axles, Springs and Flange Tires; Car Wheels of Cast Iron a variety of patterns and chills; Car Wheels of Cast Iron with wrought tires; Axles of best American refined iron; springs; boxes and bolts for cars.

**Cotton, Wool and Flax Machinery** of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and millwright work generally, hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR,  
Patterson, N. J., or 60 Wall St., New York.

**IRON BRIDGES, BRIDGE & ROOF BOLTS, etc.** STARKS & PRUYN, of Albany, New York, having at great expense established a manufactory with every facility of Machinery for Manufacturing Iron Bridges, Bridge and Roof Bolts, together with all kinds of the larger sizes of Screw Bolts, Iron Railings, Steam Boilers, and every description of Wrought Iron Work, are prepared to furnish to order, on the shortest notice, any of the above branches, of the very best of American Refined Iron, and at the lowest rates.

During the past year, S. & P. have furnished several Iron Bridges for the Erie Canal, Albany Basin, etc.—and a large amount of Railroad Bridge Bolts, all of which have given the most perfect satisfaction.

They are permitted to refer to the following gentlemen:

Charles Cook, Nelson J. Beach, Jacob Hinds, Willard Smith, Esq.,	Canal Commissioners of the State of New York.
Mr. Wm. Howe,	Engineer of the Bridges for the Albany Basin.
Mr. S. Whipple,	Railroad Bridge Builders, Springfield, Mass.
Engineer & Bridge Builder, Utica, N. Y.	

January 1, 1849.

**FRENCH & BAIRD'S Patent Spark Arrester.**



**TO THOSE INTERESTED IN RAILROADS.** Railroad Directors and Managers are respectfully invited to examine an improved Spark Arrester recently patented by the undersigned.

Our improved Spark Arresters have been extensively used during the last year on both Passenger and Freight Engines, and have been brought to such a state of perfection, that no annoyance from sparks or dust from the chimney of engines on which they are used is experienced.

These Arresters are constructed on an entirely different principle from any heretofore offered to the public. The form is such that a rotary motion is imparted to the heated air, smoke and sparks passing through the chimney, and by the centrifugal force thus acquired by the sparks and dust, they are separated from the smoke and steam, and thrown into an outer chamber of the chimney through openings near its top, from whence they fall by their own gravity to the bottom of this chamber; the smoke and steam passing off at the top of the chimney, through a capacious and unobstructed passage, thus arresting the sparks without impairing the power of the engine by diminishing the draught or activity of the fire in the furnace.

These chimneys and arresters are simple, durable and neat in appearance. They are now in use on the following roads, to the managers and other officers of which we are at liberty to refer those who may desire to purchase, or obtain further information in regard to their merits.

R. L. Stevens, president Camden and Amboy railroad company; Rich'd Peters, sup't Georgia railroad, Augusta, Ga.; G. A. Nicolls, sup't Reading railroad, Reading, Pa.; W. E. Morris, pres't Philadelphia, Germantown and Norristown railroad company, Philad.; E. B. Dudley, pres't W. and R. railroad co., Wilmington, N. C.; Col. Jas. Gadsden, pres't S. Carolina railroad co., Charleston, S. C.; W. C. Walker, agent V. and J. railroad, Vicksburg, Miss.; R. S. Van Rensselaer, sup't Hart. and N. H. railroad; W. R. McKee, sup't Lexington and Ohio railroad; T. L. Smith, sup't N. Jersey railroad and transp. co.; J. Elliott, sup't M. P. Philadel. and Wilm. railroad; J. O. Sterns, sup't Elizabethtown and Somerville railroad; R. R. Cuyler, pres't Central railroad, Savannah, Ga.; J. D. Gray, sup't Macon, (Ga.) railroad; J. H. Cleveland, sup't of Southern railroad, Monroe, Mich.; M. F. Crittenden, sup't mo. power Central railroad, Detroit, Mich.; G. B. Fisk, pres't Long Island railroad, Brooklyn, L. I.

Orders for these chimneys and arresters, addressed to the subscribers, care of Baldwin and Whitney, of Philadelphia, will be promptly executed.

The subscribers will dispose of single rights, or rights for one or more States on reasonable terms.

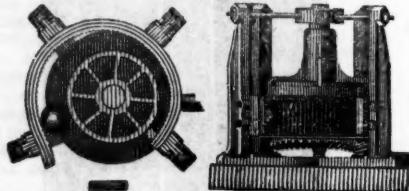
FRENCH & BAIRD.

Philadelphia, Pa., April 6, 1844.

The letters in the figures refer to the article given in the Journal of June, 1844.

#### MACHINERY.

##### Henry Burden's Patent Revolving Shingling Machine.



THE Subscriber having recently purchased the right of this machine for the United States, now offers to make transfers of the right to run said machine, or sell to those who may be desirous to purchase the right for one or more of the States.

This machine is now in successful operation in ten or twelve iron works in and about the vicinity of Pittsburgh, also at Phoenixville and Reading, Pa., Covington Iron Works, Md., Troy Rolling Mills, and Troy Iron and Nail Factory, Troy, N. Y., where it has given universal satisfaction.

Its advantages over the ordinary Forge Hammer are numerous: considerable saving in first cost; saving in power; the entire saving of shingler's, or hammerman's wages, as no attendance whatever is necessary, it being entirely self-acting; saving in time from the quantity of work done, as one machine is capable of working the iron from sixty puddling furnaces; saving of waste, as nothing but the scoria is thrown off, and that most effectually; saving of staff, as none are used or required. The time required to furnish a bloom being only about six seconds, the scoria has no time to set, consequently is got rid of much easier than when allowed to congeal as under the hammer. The iron being discharged from the machine so hot, rolls better and is much easier on the rollers and machinery. The bars roll rounder, and are much better finished. The subscriber feels confident that persons who will examine for themselves the machinery in operation, will find it possesses more advantages than have been enumerated. For further particulars address the subscriber at Troy, N. Y.

P. A. BURDEN.

##### Railroad Spikes and Wrought Iron Fastenings.

THE TROY IRON AND NAIL FACTORY, exclusive owner of all Henry Burden's Patented Machinery for making Spikes, have facilities for manufacturing large quantities upon short notice, and of a quality unsurpassed.

Wrought Iron Chairs, Clamps, Keys and Bolts for Railroad fastenings, also made to order. A full assortment of Ship and Boat Spikes always on hand.

All orders addressed to the Agent at the Factory will receive immediate attention.

P. A. BURDEN, Agent.

Troy Iron and Nail Factory, Troy, N. Y.

# ENGINE AND CAR WORKS.

## DAVENPORT & BRIDGES,

HAVING ASSOCIATED WITH THEM

MR. LEWIS KIRK, OF READING, PA.,

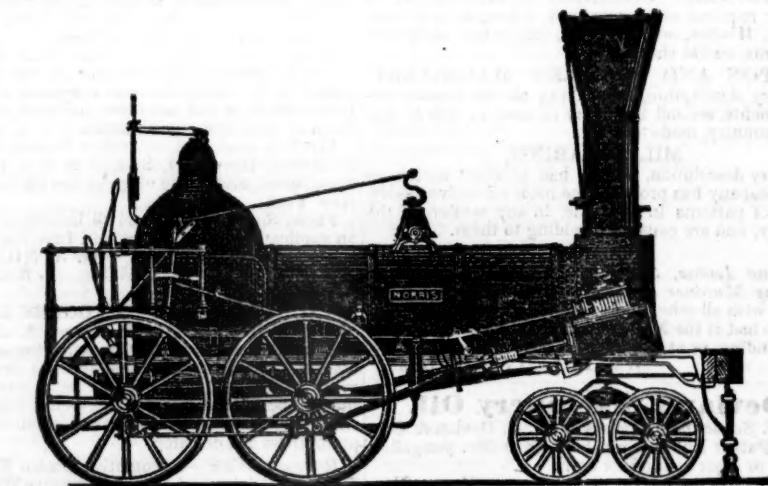
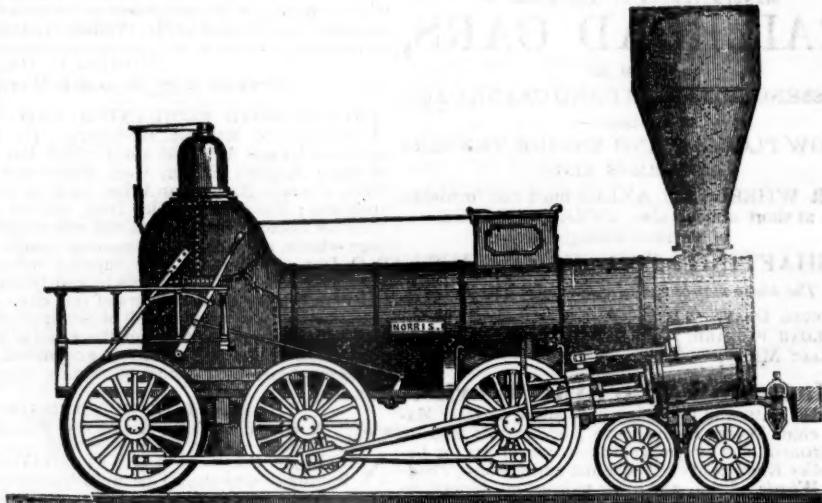
And recently enlarged their Establishment, (making it now the most extensive in the United States,) they are prepared to manufacture to order Locomotive Engines and Cars of every description. Stationary Engines, Steam Hammers, Boilers, and all kinds of Railroad Machinery. Also, Castings and Forge Irons of all kinds—including Chilled Wheels, Frogs, Chairs, Switches, Car Axles, and Locomotive Cranks, Connecting Rods, Steel Springs, Bolts, etc., etc. Orders from all parts of the country solicited for Engines and Cars, or any part or parts of the same. All orders will be furnished at short notice, and on as good terms as any manufacturer in the country. Coaches pass our works every fifteen minutes during the day, from Brattle St., Boston.

DAVENPORT, BRIDGES & KIRK.

Cambridgeport, Mass., February 16th, 1849.

### NORRIS' LOCOMOTIVE WORKS.

#### BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA,



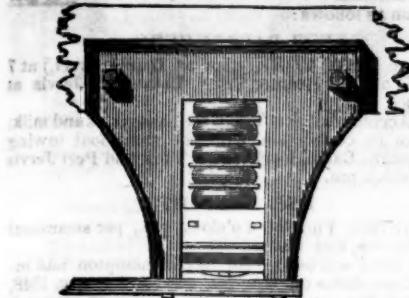
THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size. Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Wrought Iron Tyres made of any required size—the exact diameter of the Wheel Centre, being given. The Tires are made to fit on same without the necessity of turning out inside. Iron and Brass castings, Axles, etc., fitted up complete with Trucks for otherwise.

NORRIS, BROTHERS.

## Fuller's Patent India-Rubber Springs.



THERE can now be no ground of opposition whatever to these Springs. The Commissioner of Patents has not only rejected the application for a Patent for a similar Spring, but a Patent has just been granted for an entirely new species of India Rubber, the quality of which can be surpassed by no other kind, as the experiments which have lately been publicly made, have fully proved. No extremes of heat or cold can effect it, nor will any amount of pressure permanently alter its shape. This Patent refutes the statement of the "New England Car Company" as to their sole right to use India Rubber.

The Spring (composed of alternate layers of India Rubber Discs and Metal Plates) is superior to any other form of Spring, for several reasons: It is the lightest, the most simple and most durable—there being less friction in this than in other kind; it can be regulated to any extent desired. A less quantity of Rubber is required in this form to make a good spring than in any other because each disc or ring of India Rubber is firmly supported by metal plates, and forms in itself a distinct spring nor is any spiral spring required. The Patentee is currently able to supply efficient springs at a less cost than any other parties can do. Purchasers are guaranteed in the use of these springs.

The New England Car Company have no right to make an India-rubber Spring with a Bolt through the centre. All companies using such a spring are liable to an action.

Fuller's spring has been used nearly four years with complete success. It is applicable equally to Passenger and Freight Cars, to Locomotives and Tenders.—Bumpers and Draw Springs are always kept on hand, which merely require screwing to a car. It has lately been applied also to several kinds of Machines.

Action will be brought against all persons infringing upon these patents.

The subscriber will show Models and Drawings of the various modes of application to Cars, Machines, Omnibuses, &c. G. M. KNEVITT, Agent.

Principal office, No. 78 Broad st., New York.

Branch office, Messrs. James Lee & Co.'s, No. 18 India Wharf, Boston.

Mr. Hale, the President of the Boston and Worcester Railroad, wrote an article concerning Fuller's Springs. The "New England Car Company" take the liberty of publishing that article, omitting, however, a very important part; it is therefore given in full now, and the portion omitted by the New England Car Company is printed in italics, that the public may judge the manner in which this "company" pervert Mr. Hale's meaning.

[From the Boston Advertiser of the 7th June].

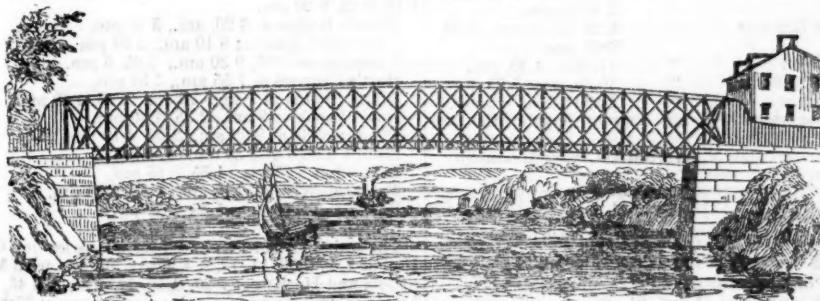
INDIA RUBBER SPRINGS FOR RAILROAD CARS.

"Of the numerous uses to which the wonderful elasticity and durability of India rubber, renders this material applicable, we are hardly aware of one, in which it has been more successful than in forming springs for railroad cars. We have had occasion to observe, for some months past, its application to this use, on one of the passenger cars on the Newton special train of the Boston and Worcester railroad.—It is there used not only for the springs on which the car rests, but for the springs attached to the draw bar, at each end of the car, to prevent any jar on the sudden commencement, or interruption of the motion of the car. For both these purposes it seems to be admirably adapted, and we do not learn that during that period in which it has been used, any defect has been discovered. It renders the movements of the car extremely easy, and protects it more effectually, we think, than any other spring we have seen in use, from every harsh or unpleasant motion, either vertical or horizontal. It is also simple in its form and application, extremely light, and little liable to get out of repair. During the period of some months in which we have seen the springs in operation, there is no apparent wear or diminution of its efficiency. Each spring is composed of several circular layers of rings of India rubber, a thin metallic plate of the same size being interposed between each of the layers. From the simplicity of its form, it cannot be expensive, and it admits of being made more or less elastic almost at pleasure. The invention, we understand, was first patented in England, where it has been introduced to general use on several of the principal railroads, and we have no doubt it will come into very extensive use in this country. The patent for this invention, we understand, has been granted to Mr. W. C. Fuller, in England and France, and also in this country. Mr. Knevitt, of New York, is the agent for the patentee in the United States, and he has established a branch office for the supply of the article in this city, as may be learned from an advertisement in another column of this paper."

CORROSIVE SUBLIMATE.

THIS article now extensively used for the preservation of timber, is manufactured and for sale by POWERS & WEIGHTMAN, manufacturing Chemists, Philadelphia.

Jan. 20, 1849.



RIDER'S PATENT IRON BRIDGE.

THE RIDER IRON BRIDGE having been fully tested on the Harlem Railroad, by constant use for about eighteen months, and found to answer the full expectations of its most sanguine friends, is now offered to the public with the utmost confidence as to its great utility over any other Bridge now known.

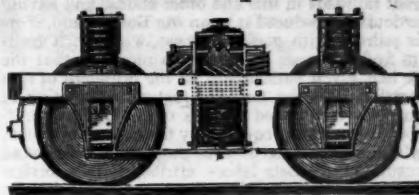
The plan of this Bridge is to use the iron so as to obtain its greatest longitudinal strength, and at the same time is so arranged as to secure the combined principles of the Arch, Suspension and Triangle, all under such controlling power as causes each to act in the most perfect and secure manner, and at the same time impart its greatest strength to the whole work.

THE IRON RIDER BRIDGE COMPANY are prepared to furnish large quantities of Iron Bridging for Railroad or other purposes, made under the above patent, at short notice, and at prices far more economical than the best wood structure, and on certain conditions, the first cost may be made the same as wood.

Models, and pamphlets giving full descriptions of the RIDER BRIDGE, with certificates based on actual trial from undoubted sources, will be found at the office of the Company, 74 BROADWAY, up stairs, or of W. RIDER & BROTHERS, 58 Liberty Street, where terms of contract will be made known, and where orders are solicited.

November 25, 1848. S. M. MARSHALL, Agent for the Company.

F. M. Ray's Patent India-rubber Car Springs.



India-rubber Springs for Railroad Cars were first introduced into use, about two years since, by the inventor. The New England Car Company, now possesses the exclusive right to use, and apply them for this purpose in the United States. It is the only concern that has tested their value by actual experiment, and in all arguments in favor of them, drawn from experience of their use, are in those cases where they have been furnished by this company. It has furnished every spring in use upon the Boston and Worcester road, and, in fact, it has furnished all the springs ever used in this country, with one or two exceptions, where they have been furnished in violation of the rights of this company; and those using them have been legally proceeded against for their use, as will invariably be done in every case of such violation.

The Spring formed by alternate layers of India-rubber discs and metal plates, which Mr. Ray claims to be his invention, was invented by Mr. Ray in 1844. In proof of which we give the deposition of Osgood Bradley, of the firm of Bradley & Rice, of Worcester, Mass., car manufacturers, and men of the highest respectability. In this deposition, in relation to the right of parties to use these springs, he says:

"I have known Mr. Ray since 1835. In the last of May or the commencement of June, 1844, he was at my establishment, making draft of car trucks. He staid there until about the first of July, and left and went to New York. Was gone some 8 or 10 days, and returned to Worcester. He then on his return said he had a spring that would put iron and steel springs into the shade. Said he would show it to me in a day or two. He showed it to me some two or three days afterwards. It was a block of wood with a hole in it. In the hole he had three pieces of India-rubber, with iron washers between them, such as are used under the nuts of cars. Those were put on to a spindle running through them, which worked in the hole. The model now exhibited is similar to the one shown him by Ray. After the model had been put into a vice, witness said that he might as well make a spring of putty. Ray then said that he meant to use a different kind of rubber, and referred to the use of Goodyear's Metallic Rubber, and that a good spring would grow out of it." There are many other depositions to the same effect.

The history of the invention of these springs, together with these depositions, proving the priority of the invention of Mr. Ray, will be furnished to all interested at their office in New York.

This company is not confined to any particular form in the manufacture of their springs. They have applied them in various ways, and they warrant all they sell.

The above cut represents precisely the manner in which the springs were applied to the cars on the Boston and Worcester road, of which Mr. Hale, President of this road speaks, and to which Mr. Knevitt refers in his advertisement. Mr. Hale immediately corrected his mistake in the article quoted by Mr. Knevitt, as will be seen by the following from his paper of June 8, 1848. He says:

INDIA-RUBBER SPRINGS FOR RAILROAD CARS.—"In our paper yesterday, we called attention to what promises to be a very useful invention, consisting of the application of a manufacture of India-rubber to the construction of springs for railroad cars. Our object was to aid in making known to the public, what appeared to us the valuable properties of the invention, as they had been exhibited on trial, on one of the passenger cars of the Boston and Worcester railroad. As to the origin of the invention we had no particular knowledge, but we had been informed that it was the same which had been introduced in England, and which had been subsequently patented in this country; and, we were led to suppose that the manufacturers who have so successfully applied this material, in the case to which we referred had become possessed of the right to use that patent. It will be seen from the following communication, addressed to us by a member of the company, by which the Worcester railroad was supplied with the article upon which our remarks were based, that we were in an error, and that the springs here introduced are an American invention, as well as an American manufacture. How far the English invention may differ from it we have had no opportunity of judging."

MR. HALE.—"The New England Car Co., having been engaged for the last six months in introducing the Vulcanized India-rubber Car Springs upon the different railroads in this and other states, and having in particular introduced it upon the Boston and Worcester railroad with perfect success, were much gratified to find, by your paper of this morning, that the article had given satisfaction to the president of that corporation, and the terms of just commendation in which you were pleased to speak of it. But their gratification was scarcely equalled by their surprise, when, on arriving at the close of your paragraph, they found the results of all their labors attributed to a foreign source, with which the New England Car Co. has no connection. The material used on the Boston and Worcester railroad, and all the other railroads in this country, where any preparation of India-rubber has been successfully applied, is entirely an American invention, patented in the year 1844 to Charles Goodyear, of New Haven, Conn., and the application of it to this purpose and the form in which it is applied are the invention of F. M. Ray of New York. The only material now in use, and so far as has yet appeared, the only preparation of India rubber capable of answering the purpose, has been furnished under these patents by the New England Car Company, manufactured under the immediate inspection of their own agent. If any other should be produced, the right to use it would depend upon the question of its interference with Mr. Goodyear's patent. The New England Car Company have their place of business in this city at No. 99 State street, and are prepared to answer all orders for the Vulcanized India rubber Car Springs, of the same quality and of the same manufacture as those which they have already placed on your road, and most to the other roads terminating in this city."

And yet Mr. Knecht is using these experiments made upon the Springs of the Car Company to induce the public to purchase his springs, and is attempting to impose upon them the belief that the springs used were furnished by him! We ask whether such a course is honorable, or entitles his statements to much consideration from the public.

The above Springs are for sale 98 Broadway, New York, and 99 State street, Boston.

EDWARD CRANE Agent, Boston.  
F. M. RAY, Agent, New York.

Boston, May 8, 1849.

## RAILROADS.

### BOSTON AND PROVIDENCE RAILROAD.

On and after MONDAY, APRIL 2d, the

Trains will run as follows:—

Steamboat Train—Leave Boston at 5 pm. Leaves Providence on the arrival of the train from Stonington.

Accommodation Trains—Leave Boston at 8 am., and 4 pm. Leave Providence at 8½, a.m., and 4, pm.

Dedham Trains—Leave Boston at 8½ am., 12 m., 3½, 6½, and 10½ pm. Leave Dedham at 7, 9½, a.m., 2½, 5, and 8 pm.

Stoughton Trains—Leave Boston at 1 am., and 5½ pm. Leave Stoughton at 11½ am., and 3½ pm.

Freight Trains—Leave Boston at 11 am., and 6 pm. Leave Providence at 4 am., and 7.40 am.

On and after Wednesday, Nov. 1, the DEDHAM TRAIN will run as follows: Leave Boston at 9 am., 12 m., 3, 5½, and 10½ pm. Leave Dedham at 8, 10½, am., 1½, 4½, and 9 pm.

WM. RAYMOND LEE, Sup't.

### NORWICH AND WORCESTER RAILROAD.

Summer Arrangement.—1849.

Accommodation Trains daily (Sundays excepted.)

Leave Norwich at 6 am., 12 m., and 2 55 pm.

Leave Worcester at 7½ and 10½ am., and 4½ pm., connecting with the trains of the Boston and Worcester, Providence and Worcester, Worcester and Nashua and Western railroads.

New York & Boston Line. Railroad & Steamers. Leave New York and Boston daily, Sundays excepted, at 5 pm.—At New York from pier No. 1, North River.—At Boston from corner Lincoln and Beach streets, opposite United States Hotel. The steamboat train stops only at Framingham, Worcester, Danielsonville and Norwich.

Freight Trains leave Norwich and Worcester daily, Sundays excepted.—From Worcester at 6½ am., from Norwich at 7 am.

Fares are less when paid for Tickets than when paid in the Cars.

S. H. P. LEE, Jr., Sup't.

ASTERN RAILROAD, WINTER ARRANGEMENT. On and after MONDAY, Oct. 2, 1848.

Trains will leave Eastern Railroad

Depot, Eastern Avenue, Commercial-street, Boston, daily, (Sundays excepted.)

For Lynn, 7, 9 11½, a.m., 12, 2½, 3½, 4½, 6, p.m.

Salem, 7, 9, 11½, a.m., 12, 2½, 3½, 4½, 6, p.m.

Manchester, 9, a.m., 3½, p.m.

Gloucester, 9, a.m., 3½, p.m.

Newburyport, 7, 11½, a.m., 2½, 4½, p.m.

Portsmouth, 7, a.m., 2½, 4½, p.m.

Portland, Me., 7, a.m., 2½, 4½, p.m.

And for Boston,

From Portland, 7½, a.m., 3, p.m.

Portsmouth, 7, 9 11½, a.m., 5½, p.m.

Newburyport, 7, 10 11½, a.m., 2, 6\*, p.m.

Gloucester, 7½, a.m., 3½ pm.

Manchester, 8, a.m., 3½, p.m.

Salem, 7½, 8½\*, 9\*, 10½, 11-40\*, a.m., 2½, 3\*, 4½\*, 7½, p.m.

Lynn, 7½, 8½\*, 9½\*, 10½, 11-55\*, a.m., 2½, 3½\*, 4½\*, 7½, p.m.

On Monday, Wednesday, and Friday, a train will leave Boston for Lynn and Salem, at 7 o'clock; p.m.

On Tuesday, Thursday, and Saturday, a train will leave EAST BOSTON for Lynn and Salem, at 10½ o'clock, p.m.

\*Or on their arrival from the East.

### MARBLEHEAD BRANCH.

Trains leave

Marblehead for Salem, 7½, 8½, 10, 11-25, a.m., 2, 4½, 6½, p.m.

Salem for Marblehead, 7½, 8½, 10½, a.m., 12½, 3½, 5½, 6½, p.m.

### GLoucester BRANCH.

Trains leave

Salem for Manchester at 9½, a.m., 4½, p.m.

Salem for Gloucester at 9½, a.m., 4½, p.m.

Trains leave

Gloucester for Salem at 7½, a.m., 3½ pm.

Manchester for Salem at 8, a.m., 3½ pm.

Freight Trains each way daily. Office 1 Merchants' Row, Boston.

Feb. 3. JOHN KINSMAN, Superintendent.

ESSEX RAILROAD—SALEM to LAWRENCE, through Danvers, New Mills, North Danvers, Middleton, and North Andover.

On and after Monday, Oct. 2, 1848, trains leave daily (Sundays excepted) Eastern Railroad Depot, Washington-st.

Salem for South Danvers at 7:45, 9, a.m., 12:45,

3:15, 6:45, p.m.

Salem for North Danvers at 7:45, 9, a.m., 12:45,

3:15, p.m.

Salem for Lawrence, 9\*, a.m., 3:15\*, p.m.

Danvers " 9:10, a.m., 3:15, p.m.

North Danvers " 9:20, a.m., 3:35, p.m.

Middleton " 9:30, a.m., 3:45, p.m.

North Andover " 10, a.m., 4:20, p.m.

South Danvers for Salem at 7:45, 8:45, 11:30, a.m., 2, 45:5, p.m.

North Danvers " 8:20, 11:10, a.m., 1:40,

5:40, p.m.

Middleton " 11, a.m., 4:30, p.m.

North Andover " 10:35, a.m., 5:05, p.m.

Lawrence " 10:30\*, a.m., 5\*, p.m.

\* These trains will not stop at Frye's Mills nor Grove-st.

JOHN KINSMAN, Superintendent.

Salem, Oct. 2, 1848.

### BOSTON AND MAINE RAILROAD.

Spring Arrangement, 1849.

Outward Trains from Boston

For Portland at 6½ am. and 2½ pm.

For Rochester at 6½ am., 2½ pm.

For Great Falls at 6½ am., 2½, 4½ pm.

For Haverhill at 6½ and 12 m., 2½, 4½, 6 pm.

For Lawrence at 6½, 9, a.m., 12 m., 2½, 4½, 6, 7½ pm.

For Reading 6½, 9, a.m., 12 m., 2½, 4½, 6, 7½, 9½ pm.

Inward trains for Boston

From Portland at 7½ am., 3 pm.

From Rochester at 9 am., 4½ pm.

From Great Falls at 6½, 9½ am., 4½ pm.

From Haverhill at 7, 8½, 11 am., 3, 6½ pm.

From Lawrence at 6, 7½, 8½, 11½, a.m., 1½, 3½, 7 pm.

From Reading at 6½, 7½, 9, a.m., 12 m., 2½, 3½, 6, 7½ pm.

MEDFORD BRANCH TRAINS.

Leave Boston at 7, 9½ am., 12½, 2½, 5½, 6½, 9½ pm.

Leave Medford at 6½, 8, 10½ am., 2, 4, 5½, 6½ pm.

\* On Thursdays, 2 hours; on Saturdays, 1 hour later.

CHAS. MINOT, Super't.

Boston, March 27, 1849.

### NEW YORK AND ERIE RAILROAD WINTER ARRANGEMENT.

On Monday, January 1st, and  until further notice, the trains  will run as follows:

#### FOR PASSENGERS.

Leave NEW YORK, (foot of Duane street,) at 7 o'clock, am., by steamer Erie. Leave Port Jervis at 6 o'clock am.

An Accommodation Train, for passengers and milk, will run in connection with the steamboat towing the Freight Barge, leaving New York and Port Jervis at 4 o'clock pm.

#### FOR FREIGHT.

Leave New York at 4 o'clock, pm., per steamboat New Haven, and Barges.

The Road will be opened to Binghamton and intermediate places on Monday, the 8th January, 1849, on which day, and until further notice, the through trains will run as follows:

#### FOR PASSENGERS.

Leave New York from Duane street Pier, at eight o'clock, and Binghamton at 7 o'clock, am., daily.

#### FOR FREIGHT.

Leave New York at 4 o'clock, pm., and Binghamton at 7 o'clock, am., daily, Sundays excepted.

H. C. SEYMOUR, Superintendent.

January 1st, 1849. ja3

### NEW YORK & HARLEM RAILROAD, DAILY. WINTER ARRANGEMENT.

ON and after December 1st, 1848, the Cars will run

 as follows, until further notice:—

Trains will leave the City Hall, New York, for Harlem and Morrisania at 7, 9, 9:30, 11, am. 12 m., 2, 4, 4½, 5, 30, pm.

Trains will leave the City Hall, New York, for Fordham and Williams' Bridge, at 7:30 and 9:30 am., 12 m., 2, 4, 4½, 5, 30 pm.

Trains will leave the City Hall, New York, for Hunt's Bridge, Underhill's and Hart's Corners, at 9:30 am., 4, 15 pm.

Trains will leave the City Hall, New York, for Tuckahoe and White Plains, at 7:30 and 9:30 am., 3 and 4, 15 pm.

Trains will leave Davis' Brook, Pleasantville, Chappaqua, Mount Kisko, Bedford, Mechanicsville, Purdy's and Croton Falls, at 7:30 and 9:30 am., 3 pm.

NOTICE—Passengers are reminded of the great danger of standing upon the platform of the cars, and hereby notified that the practice is contrary to the rules of the Company, and that they do not admit any responsibility for injury sustained by any passenger upon the platforms, in case of accident.

Returning to New York will leave Morrisania and Harlem at 7:20, 8, 8:50, 10 am., 12m., 1:35, 3, 4:45, 5, 5:35 pm.

Fordham and Williams' Bridge at 7, 8:30, 9:50 am., 1:15, 3:25, 5:20 pm.

Hunt's Bridge at 8:20, am., 3:18 pm.

Underhill's Road at 8:10 am., 3:08 pm.

Tuckahoe at 8:05, 9:30 am., 3:05, 5 pm.

Hart's Corners at 7:55 am., 2:52 pm.

White Plains at 7:45, 9:10 am., 2:45, 4:40 pm.

Davis' Brook at 9 am., 2:35, 4:30 pm.

Pleasantville at 8:49 am., 2:20, 4:19 pm.

Mount Kisko at 8:30 am., 2, 4 pm.

Bedford at 8:25 am., 1:55, 3:55 pm.

Mechanicsville at 8:15 am., 1:45, 3:45 pm.

Purdy's at 8:05 am., 1:35, 3:35 pm.

Croton Falls at 8 am., 1:30, 3:30 pm.

The trains for Harlem and Morrisania leaving City Hall at 7, 9, 9:30, 11, 12, 2, 4, and 5:30, and from Morrisania and Harlem at 7:20, 8, 10, 12, 1:35, 3, 3:45, and 5 o'clock, will land and receive passengers at 27th st., 42d, 51st, 61st, 79th, 86th, 109th, 115th, 125th, and 132d streets.

The 7:30 am., and 3 pm. Trains from New York to Croton Falls, and the 8 am. Train from Croton Falls will not stop between White Plains and New York, except at Tuckahoe, Williams' Bridge and Fordham.

A car will precede each train ten minutes to take up passengers in the city. The last car will not stop, except at Broome st. and 32d street.

Freight Trains leave New York at 6 am. and 1 pm.: leave Croton Falls at 7 am. and 2:30 pm., Sundays excepted.

NOTICE—On Sundays the 7 am. to Harlem and Morrisania, returning at 8 o'clock, and the 7:30 am. to Croton Falls, returning 1:30 pm., will be omitted, and the 7 am. from Williams' Bridge will leave at 7:40 and Morrisania and Harlem at 8 o'clock am.

## ST. LAWRENCE &amp; ATLANTIC RAILROAD COMPANY.

Notice is hereby given that the Trains run twice per day between Montreal and St. Hyacinthe, leaving each terminus alternately, until further notice.

The first train starts from St. Hyacinthe at 7 o'clock a.m., reaching Montreal at 8:30 a.m., leaving Montreal at 2 p.m., and reaching St. Hyacinthe at 3:30 p.m.

The second train leaves Montreal at 9 o'clock, a.m., reaching St. Hyacinthe at 10:30 a.m., leaving St. Hyacinthe at 4 p.m., reaches Montreal at 5:30 p.m.

THOMAS STEERS, Secretary.

March 31, 1849.

## BALTIMORE AND SUSQUEHANNA RAILROAD.—Reduction of Fare. Morning and Afternoon Trains between Baltimore and York.—The Passenger Trains

run daily, except Sundays, as follows:

Leave Baltimore at 9 a.m. and 3:30 p.m.

Arrive at 9 a.m. and 6:30 p.m.

Leave York at 5 a.m. and 3 p.m.

Arrive at 12:30 p.m. & 8 p.m.

Leave York for Columbia at 1:30 p.m. & 8 a.m.

Leave Columbia for York at 8 a.m. & 2 p.m.

Fare:

Fare to York \$1.50

" Wrightsville 2.00

" Columbia 2.25

Way points in proportion.

## PITTSBURG, GETTYSBURG, AND HARISBURG.

Through tickets to Pittsburg via stage to Harrisburg \$3.90

Or via Lancaster by railroad 10

Through tickets to Harrisburg or Gettysburg 3

In connection with the afternoon train at 3:30 o'clock, a horse car is run to Green Spring and Owing's Mill, arriving at the Mills at 5:30 p.m.

Returning, leaves Owing's Mills at 7 a.m.

D. C. H. BORDLEY, Sup't.

31 ly Ticket Office, 63 North st.

## GEORGIA RAILROAD. FROM AUGUSTA TO ATLANTA—171 MILES.

AND WESTERN AND ATLANTIC RAILROAD, FROM ATLANTA TO DALTON, 100 MILES.

This Road, in connection with the South Carolina Railroad, and Western and Atlantic Railroad, now forms a continuous line, 408 miles in length, from Charleston to Dalton (Cross Plains) in Murray county, Ga. 32 miles from Chattanooga, Tenn.

## RATES OF FREIGHT.

	Between Augusta and Dalton.	Between Charleston and Dalton.	
	271 miles.	406 miles.	
1st class Boxes of Hats, Bonnets, and Furniture, per cubic foot	\$0 18	\$0 28	
2d class Boxes and Bales of Dry Goods, Saddlery, Glass, Paints, Drugs, and Confectionary, per 100 lbs.	1 00	1 50	
3d class Sugar, Coffee, Liquor, Bagging, Rope, Cotton, Yarns, Tobacco, Leather, Hides, Copper, Tin, Feathers, Sheet Iron, Hollow ware, Castings, Crockery, etc.	0 60	0 85	
4th class Flour, Rice, Bacon, Pork, Beef, Fish, Lard, Tallow, Beeswax, Bar Iron, Ginseng, Mill Gear, Pig Iron, and Grindstones, etc.	0 40	0 65	
Cotton, per 100 lbs.	0 45	0 70	
Molasses per hogshead	8 50	13 50	
" barrel	2 50	4 25	
Salt per bushel	0 18		
Salt per Liverpool sack	0 65		
Ploughs, Corn Shellers, Cultivators, Straw Cutters, Wheelbarrows	0 75	1 50	

German or other emigrants, in lots of 20 or more, will be carried over the above roads at 2 cents per mile.

Goods consigned to S. C. Railroad Company will be forwarded free of commissions. Freights payable at Dalton, Ga., will be 40 cents per ton.

F. C. ARMS, Supt. of Transportation.

## LITTLE MIAMI RAILROAD.—WINTER ARRANGEMENT.

Change of Hours. n and after Thursday, November 9th, 1848, until further notice, Passenger Trains will run as follows:

Leave Depot East Front street at 9:30 a.m., and 2:30 p.m., for Milford, Foster's Crossings, Deerfield, Morrow, Waynesville, Spring Valley, Xenia, Yellow Springs, and Springfield.

Returning, leave Springfield, at 2:30 p.m., and 9:30 a.m.

Passengers for New York, Boston, and intermediate points should take the 9:30 a.m., Train from Cincinnati.

Passengers for Columbus, Zanesville, Wheeling and intermediate towns, should take the 9:30 a.m., Train.

The Ohio Stage Company are running the following lines in connection with the Trains:

Daily Daylight Line to Columbus from Springfield in connection with the Morning Train from Cincinnati. Also, Daily Lines to Columbus, from Xenia and Springfield, connecting with the 2:30 p.m., Train from Cincinnati.

The 2:30 p.m., Train from Cincinnati, and 2:30 a.m., Train from Springfield, are intended for the accommodation of Way Passengers only, and will be eight hours on the road.

Leave Cincinnati to Xenia \$1.90

Do do Springfield 2.50

Do do Sandusky City 6.50

Do do Buffalo 10.00

Do do Columbus 4.50

For other information and through tickets, apply at the Ticket Office on Broadway, near Front-st., Cincinnati.

W. H. CLEMENTS, Superintendent.

The Company will not be responsible for Baggage exceeding 50 dollars in value, unless the same is returned to the Conductors or Agent, and freight paid at the rate of a passage for every 500 dollars in value to that amount.

## BALTIMORE AND OHIO RAILROAD, MAIN STEM.

The Train carrying the Great Western

Mail leaves Baltimore every morning

at 7:30, and Cumberland at 8 o'clock

passing Ellicott's Mills, Frederick, Harper's Ferry, Martinsburg and Hancock, connecting daily each

way with the Washington Trains at the Relay House

seven miles from Baltimore, with the Winchester

Trains at Harper's Ferry—with the various railroad

and steamboat lines between Baltimore and Philadelphia, and with the lines of Post Coaches between

Cumberland and Wheeling and the fine Steamboats

on the Monongahela Slack Water between Brownsville and Pittsburgh. Time of arrival at both Cum

berland and Baltimore 5:30 P. M. Fare between these

points \$7, and 4 cents per mile for less distances.

Fare through to Wheeling \$11, and time about 36

hours, to Pittsburgh \$10, and time about 32 hours.

Through tickets from Philadelphia to Wheeling \$13, to Pittsburgh \$12. Extra train daily, except Sundays, from Baltimore to Frederick at 4 P. M., and from

Frederick to Baltimore at 8 A. M.

## WASHINGTON BRANCH.

Daily trains at 9 A. M., and 5 P. M., and 12 at night from Baltimore, and at 6 A. M. and 5:30 P. M. from Washington, connecting daily with the lines North, South and West, at Baltimore, Washington, and the Relay House. Fare \$1.60 through between Baltimore and Washington, in either direction, 4 cents per mile for intermediate distances.

\$13 yl

## PHILADELPHIA, WILMINGTON, &amp; BALTIMORE RAILROAD.

Summer Arrangement.

April 1st, 1849.—Fare \$3.

Leave Philadelphia 8:30 a.m., and 10 p.m.

Leave Baltimore 9 a.m., and 8 p.m.

Sunday—Leave Philadelphia at 10 p.m.

Leave Baltimore at 8 p.m.

Trains stop at way stations.

Charleston, S. C.

Through tickets Philadelphia to Charleston, \$20.

Pittsburg and Wheeling.

Through ticket, Philadelphia to Pittsburg, \$12.

Through tickets sold at Philadelphia office only.

Leave Philadelphia at 12 m. 4 and 7 p.m.

Leave Pittsburg at 7:30 a.m., 4:30 and 7 p.m.

Newcastle Line.

Leave Philadelphia at 2:30 p.m.—Baltimore at 1:30 p.m.

Fare \$3.—Second class, \$2.

N.B.—Extra baggage charged for.

I. R. TRIMBLE, Gen. Supt.

## PHILADELPHIA &amp; READING RAILROAD.

Passenger Train Arrangement for 1849.

A Passenger Train will leave Philadelphia and Pottsville daily, except Sundays, at 9 o'clock am.

The Train from Philadelphia arrives at Reading at 12:15 p.m.

The Train from Pottsville arrives at Reading at 10:45 a.m.

Fares. Miles. No. 1. No. 2

Between Phila. and Pottsville, 92 \$3.50 and \$3.00

" " Reading 55 2.25 and 1.90

" Pottsville " 34 1.40 and 1.20

Five minutes allowed at Reading, and three at other way stations.

Passenger Depot in Philadelphia corner of Broad and Vine streets.

## CENTRAL RAILROAD—FROM SAVANNAH to Macon. Distance 190 miles.

This Road is open for the transportation of Passengers & Freight.

Rate of Passage \$8.00. Freight—

On weight goods generally, 50 cts. per hundred

On measurement goods 13 cts. per cubic ft.

On brls. wet (except molasses and oil) 1.50 per barrel.

On brls. dry (except lime) 80 cts. per barrel.

On iron in pigs or bars, castings for mills, and unboxed machinery 40 cts. per hundred

On hds. and pipes of liquor, not over 120 gallons \$5.00 per hhd.

On molasses and oil \$6.00 per hhd.

Goods addressed to F. WINTER, Agent, forwarded free of commission.

THOMAS PURSE, Gen'l Sup't Transportation.

## SOUTH CAROLINA RAILROAD.—A PASSENGER Train runs daily from Charleston, on the arrival of the boats from Wilmington, N. C., in connection with trains on the Georgia, and Western and Atlantic Railroads.

and by stage lines and steamers connects with the Montgomery and West Point, and the Tuscarawas Railroad in N. Alabama.

Fare through from Charleston to Montgomery daily \$26.50

Fare through from Charleston to Huntsville, Decatur and Tuscarawas 22.00

The South Carolina Railroad Co. engage to receive merchandise consigned to their order, and to forward the same to any point on their road; and to the different stations on the Georgia and Western and Atlantic Railroad; and to Montgomery, Ala., by the West Point and Montgomery Railroad.

JOHN KING, Jr., Agent.

## THE WESTERN AND ATLANTIC RAILROAD.—This Road is now in operation to Oothcaloga, a distance of 80 miles, and connects daily (Sundays excepted) with the Georgia Railroad.

From Kingston, on this road, there is a tri-weekly line of stages, which leave on the arrival of the cars on Tuesday, Thursday and Saturday, for Warrenton, Huntsville, Decatur, and Tuscarawas, Alabama, and Memphis, Tennessee.

On the same days the stages leave Oothcaloga for Chattanooga, Jasper, Murfreesboro, Knoxville and Nashville, Tennessee.

This is the most expeditious route from the east to any of these places.

CHAS. F. M. GARRETT, Chief Engineer

## PATENT MACHINE MADE HORSE-SHOES.

The Troy Iron and Nail Factory have always on hand a general assortment of Horse Shoes, made from Refined American Iron.

Four sizes being made, it will be well for those ordering to remember that the size of the shoe increases as the numbers—No. 1 being the smallest.

P. A. BURDEN, Agent.

Troy Iron and Nail Factory, Troy, N. Y.

## TO LOCOMOTIVE AND MARINE ENGINE

Boiler Builders. Pascal Iron Works, Philadelphia. Welded Wrought Iron Flues, suitable for Locomotives, Marine, and other Steam Engine Boilers, from 2 to 5 inches in diameter. Also, Pipes for Gas, Steam and other purposes; extra strong Tube for Hydraulic Presses; hollow Pistons for Pumps of Steam Engines etc. Manufactured and for sale by

MORRIS, TASKER & MORRIS, Warehouse S. E. corner 3d and Walnut streets, Philadelphia.

**SPRING STEEL FOR LOCOMOTIVES, TENDERS AND CARS.**—The subscriber is engaged in manufacturing spring steel from  $1\frac{1}{2}$  to 6 inches in width, and of any thickness required: large quantities are yearly furnished for railroad purposes, and wherever used its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address J. F. WINSLOW, Agent, Albany Iron and Nail Works.

**SCHENECTADY LOCOMOTIVE WORKS**  
SCHENECTADY, N. Y.

THESE Works are in full operation in Manufacturing to order, Locomotive Steam Engines & Tenders, of the best principle and construction of material, using wrought iron heavy frames with pedestals welded thereto, and all parts of the engine made of the best wrought iron, except cylinders, pump and boxes—obtaining greater durability, and carrying less weight over the road, than engines constructed of cast iron.

Wrought Iron Tires made any required size, and Tires bent and welded with dispatch.

Chilled Wheels for Cars, Tucks and Tenders, made from the toughest iron.

Driving and Tender and Car Wheels fitted to Axles with Brass Boxes and Springs, and Railroad Machinery generally. Manufactured and for sale by E. S. NORRIS.

April 11, 1848.

**P. S. DEVLAN & CO's Patent Lubricating Oil.**

THE Subscribers invite the attention of Railroads, Steamboats, Machinists, etc., to the above article of Oil; they are prepared to supply it in any quantity. Certificates of its superiority over all other oils, from several of the largest Works and Railroads, can be seen at our office.

KENNEDY & GELSTON,  
5½ Pine street, New York,

Sole Agents for the New England States and State of New York.

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INCORPORATED BY ACT OF PARLIAMENT.

NOTICE is hereby given, that an ASSESSMENT OF ONE SHILLING AND THREE PENCE PER SHARE has been levied on the STOCK OF THE UPPER CANADA MINING COMPANY—one half thereof, or Seven Pence Halfpenny per share, being payable, at the office of the Company, in Hamilton, or to Messrs. W. & J. CURRIE, Agents, Wall St. New York, on the First Day of April next, and the other half on the First day of July next ensuing. By order,

J. D. BRONDEEST,  
Secretary U. C. M. C.

Hamilton, 24th February, 1848.

12tf

**WILLIAM JESSOP & SONS' CELEBRATED CAST-STEEL.**

The subscribers have on hand, and are constantly receiving from their manufactory,

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Double Refined Cast Steel—square, flat and octagon. Best warranted Cast Steel—square, flat and octagon. Best double and single Shear Steel—warranted. Machinery Steel—round. Best and 2d gy. Sheet Steel—for saws and other purposes.

German Steel—flat and square, "W. I. & S." "Eagle" and "Goat" stamps.

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All of which are offered for sale on the most favorable terms by WM. JESSOP & SONS, 91 John street, New York.

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Cincinnati, Ohio, Oct. 2, 1848.

44tf

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JOHN F. WINSLOW, Agent.

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